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This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

MUHAMAD FAIZUL B ABD KADIR

CERTIFICATION OF APPROVAL

**The Development of UTPiFAQ.COM Using
Frequently Asked Question Management System (FAQMaS)
for Internship Personnel**

By

MUHAMAD FAIZUL B ABD KADIR

A project dissertation submitted to the
Business Information Systems Programme
Universiti Teknologi PETRONAS
in partial fulfilment of the requirement for the
BACHELOR OF TECHNOLOGY (Hons)
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ABSTRACT

The industrial internship program is a course set by the administration of university as part of the curricular structure to expose the student with the real situation and requirement of the industry. Along the course period, there are processes and procedure that intern need to follow. The problem starts when intern facing same issue and everyone is asking the same thing. As the main reference point, the Centre for Student Internship, Mobility and Adjunct Lectureship (CSIMAL) is being asked with the same question by multiple interns. Unfortunately, this has created a redundancy in the effort to solve the same issue all over again. Therefore, to avoid redundancy, Industrial Internship Frequently Asked Question Management System (FAQMaS) is developed. The FAQMaS is built on the basis of providing a platform or medium for common questions and answer related to the internship process. By collecting the questions and answers, the web application will assist the CSIMAL staff and UTP lecturer in providing direct and quick answer without the need to personally contact the staff. The development of FAQMaS involves survey and interview session with the related user, both intern and staff. With the input and data from these users will then convert into the building of prototype of the application. In additional, the FAQMaS will adopt the taxonomy concept in managing questions regarding internship and provide answers following CSIMAL standard. Accessible via internet, the web application will serve intern and other personnel who require information without creating redundant issue on the CSIMAL staff and UTP's lecturer. It is believed to serve the user much faster and reliable in the search for information instead of fully depending on staffs which tight to other responsibilities.

TABLE OF CONTENT

• CHAPTER 1: Introduction	1
1.0 Chapter Overview	1
1.1 Background of Study	1
1.2 Problem Statement	4
1.2.1 Significant of Project	
1.3 Objective and Scope of Study	5
1.3.1 Objective	
1.3.2 Scope of Study Covered	
1.4 Relevance of Project	7
1.5 Feasibility of Project	7
1.5.1 Technical Feasibility	
1.5.2 Operational Feasibility	
1.5.3 Timeline Feasibility	
• CHAPTER 2: Literature Review	9
2.0 Chapter Overview on Introduction to FAQ	9
2.1 The Applications of FAQ in Internet	10
2.2 The Applications of FAQ in Actual System	10
2.3 Taxonomy in FAQ	11
2.4 Characteristic of Good FAQ	12
• CHAPTER 3: Methodology	13
3.0 Chapter Overview	13
3.1 SDLC Method of Throw Away Prototyping	13
3.2 Project Activities	14
3.2.1 Data Analysis	
3.2.2 FAQMaS Design	
3.2.3 Implementation	
3.2.4 Maintenance and feedback	
3.3 Taxonomy Development Process	17
3.3.1 Determine Requirements	
3.3.2 Develop Draft of Taxonomy	

3.3.3 Refine Taxonomy	
3.3.4 Apply Taxonomy	
3.3.5 Manage and Maintain Taxonomy	
3.4 Key Milestone	21
3.5 Gant Chart	21
3.6 Tools Used	22
• CHAPTER 4: Result and Discussion	23
4.0 Chapter Overview	23
4.1 Process Flow Diagram	23
4.2 Result and Discussion of Interview	27
4.3 Result and Discussion of Survey	30
4.4 Result of Taxonomy Development Process	44
4.5 The Prototype: UTPiFAQ	48
4.6 User Testing and Feedback	57
• Conclusion	64
• References List	65
• Appendix	68

LIST OF FIGURE

• Figure 1: Throw Away Prototype	14
• Figure 2: Steps in Taxonomy Development Process	17
• Figure 3: Gant Chart of FAQ Management System (FAQMaS)	21
• Figure 4: Process Flow for the FAQ Management System (FAQMaS)	24
• Figure 5: The Architecture for FAQ Management System (FAQMaS)	25
• Figure 6: Use Case for FAQ Management System (FAQMaS)	26
• Figure 7: Industrial Internship Process Flow	28
• Figure 8: UTPiFAQ Internship Frequently Asked Question (UTPiFAQ)	48
• Figure 9: UTPiFAQ's About page	49
• Figure 10: UTPiFAQ's Updates page	50
• Figure 11: UTPiFAQ's FAQ Link at Home page	51
• Figure 12: UTPiFAQ's FAQ page	51
• Figure 13: UTPiFAQ's Inquiries page	52
• Figure 14: UTPiFAQ's Dashboard panel	53
• Figure 15: UTPiFAQ's FAQs panel	54
• Figure 16: UTPiFAQ's New FAQ panel	55
• Figure 17: UTPiFAQ's FAQ Category	55
• Figure 18: UTPiFAQ's FAQ Order	56

CHAPTER 1

INTRODUCTION

1.0 Chapter Overview

This chapter explains the background of the project which covers problem statement, objective of the project, and the scope of studies that relates to this project. Next, also include in this part is the explanation on the direction of the project through the objective and which domains the project will cover. In addition, this section will explain on the feasibility of the project based on the relevancy and the requirement include in the project.

1.1 Background of Study

The Frequently Asked Question is a section in most website which highlighted issues that are most commonly faced by the user. A frequently asked question (FAQ) contains collection of questions and issues along with the answer to assist the user regarding the topic. For example, FAQ on a forum will usually highlight the basic rule when discussing or commenting to the topic available in it. Stephanie (2011) recommends that the function of FAQ is to simplify the guessing part and offer an answer to the visitor that turns things easier. In addition, the FAQ is also being used as reference for user to obtain additional information regarding the content of the website.

In a way, people do prefer to have FAQ as a compulsory part of their website. This is because FAQ provide:

a) Basic Information convey

The used of FAQ to highlight important fact that is required as well as sometimes on certain thing that doesn't directly mentioned with in the content.

b) Keyword that highlight the content of the website

Some website does include certain words or phrase that highlight the deliverable of the website itself, even when search directly from the search engine.

c) Direct information on the content flow of the website

Visitor can obtain information regarding the website flow with better understanding based on the outline arrangement of the FAQ component.

d) Precise section for specific issue

For visitor with issue, accessing FAQ will lead them directly as the section is well sorting base on topic or subtopic just like the main content.

By looking at the points above, the applications of FAQ can assist in deliver information through alternative medium other than the main content. This effort is on the basis of helping the user to gain more understanding as well as to help them with their issue or question at the first place. This is important especially for new comers that doesn't really familiar with any existence process or procedure.

When comes to the issue of unfamiliarity with process and procedure, The Centre for Student Internship, Mobility and Adjunct Lectureship (CSIMAL) of Universiti Teknologi PETRONAS is facing the same situation where same question has been asked multiple times by intern and student to staff. Even after one of them answered the issue, it seems that other intern who experiences the same situation doesn't get the information. This then lead to the same thing being asked again which subject to redundant effort in answering the question by the CSIMAL staff. As a result of the redundant effort, it is affecting their productivity on others task. By that, the implementation of FAQ system is considered as the best solution to avoid redundant effort in solving repeating issue.

Holding the key value of producing a well-rounded student, Universiti Teknologi PETRONAS has stated the requirement for the entire student to undergo internship program as part of their overall undergrad requirements. The program is executed under the observation by the Centre for Student Internship, Mobility and Adjunct Lectureship (CSIMAL) or previously known as SIIU which holds the job scopes as:

- Ensure student which selected to go for the program meet all the requirements.
- Responsible in making all rules and regulations are well understood by student.
- Monitoring student to ensure all rules and regulations are being abided all time.
- Assisting the student, as representative from UTP in case of arising matter for the host company.

On top of that, the CSIMAL unit will also carry the responsibility to prepare all the related procedures, documents, and also appropriate response for enquiry arise by the student, the UTP's SV, as well as from the side of host company.

The responsibilities begin as intern reaches their semester before the internship program, where they carefully go through the requirement and then, verify the eligibility for the student to precede with the program. Finally, list name of student is prepared, as well as selection of UTP's lecturer as UTP's SV and the list of company that available to be the potential host company. The student then will undergo briefing session by CSIMAL as to let them know on the flow of the internship program and importance remarks along the seven month period. Starting from that, the student is now entering the phase where they will face a lot of process and procedure. By that means, the redundancy of the issue will begin and the CSIMAL will face a lot of email and phone call. Then come the time where solution or effort in encounter the situation is most welcome by the admin part.

The Industrial Internship Frequently Asked Question (FAQ) Management System or FAQMaS is a system to tackle the redundancy effort by assisting any related personal (intern or staff) to deal with frequently raised issue regarding internship. The idea is basically providing compilation of most asked questions by the intern to CSIMAL. Being included in the compilation is the answer, which is direct and straight forward as a quick reference for the user.

The source of the questions comes from the CSIMAL unit, UTP's SV, the host company supervisor, and the interns itself. The questions are then grouped in a form of specific categories related to topic of the internship program flow.

The system is developed as to serve the CSIMAL staff and UTP's lecturer supervisor. For interns, instead of waiting for email or call they can check the system first to obtain the answer. The UTP's SV and intern are the external parties of the standard operation procedure of the internship system. The unfamiliarity with the process however required extra reference to make thing clearer and to ensure a fluent flow for the internship procedure. The FAQ will become the source of information that feed the external parties as much info as they need as first solution before contact directly to CSIMAL.

1.2 Problem Statement

For every semester, intern that go for internship program as part of the curriculum requirement will experience some difficulties on the process. Starting from the pre internship phase, during the internship course, and post internship phase, all these have their own process flow of requirements and documentations process. For every part, intern will face issue which related to the details of the process, and same questions keeps on coming. Generally, the problems can be put as:

- a) **Redundancy effort in answering same issue being asked many times:** - The CSIMAL and the lecturer experience redundant effort in answering to the same issue multiple times which create inefficiency on their task.
- b) **The absence of centralized medium for repeated issue:** - On top of the redundant of questions asked, there is no intuitive as well as suitable medium to cater this issue. The absence of proper medium to gather all the question and answer contribute to the existence of this situation.

1.2.1 Significant of project

The objective of the project is to prepare a web based system to tackle the redundant of multiple same questions asked several times to CSIMAL staff and lecturer. By solving the redundant questions, the productivity of the staff can be increase as the problem affecting their day to day works. As administered by CSIMAL's staff themselves, all the information provided will be according to the official standard and updated from time to time.

1.3 Objective and Scope of Study

1.3.1 Objective

The purpose of this project is basically to assist the staff other regarding redundant questions and issue faced by intern in the most efficient and effective term. Since mainly, the issues cover the same topic, the creation of Frequently Asked Question (FAQ) management system is based on the objective to create centralized point to manage common issue asked by interns and make it accessible to any personnel to gain information regarding the internship as a whole.

The main objective is to provide platform as solution to minimize redundancy effort in answering the same question asked by multiple intern several times. In fact, this lead to inefficiency faced by CSIMAL's staff and UTP's SV as a result of redundant effort while solving the repeated questions. As part of the system design, the answer provided for all the common issue is based on CSIMAL standard and delivered in the most direct for clear understanding. This is to ensure visitor can easily understand the core concept of the internship process.

The second objective for the project is to develop a FAQ system to manage all the questions and answers within the platform for the CSIMAL staff to easily manage the application. By efficiently manage the content of the application, all information can be properly monitor and maintained for more effective impact to the user.

As going through the flow, some of the procedure might be not clear to the intern, and hence, with the creation of the FAQMaS, the user can actually browse webpage and find the answer to their issue without waiting for response. This will provide convenience to them as they have one source to refer and quickly obtain the solution, and for the CSIMAL staff and lecturer, they will not having the situation of a lot of incoming calls basically asking for the same question all over again.

1.3.2 Scope of Study Covered

a) **Target User**

The target user for this project is divided into two main groups which carries significant values to the project:

- The initiated end: - Focus on the user which experiencing the issue which lead to the question. This user which usually the student who will go for intern as well as the intern themselves.
- The response end: - The side which facing the redundant of same question from every batch that going for internship. Since the process is the same, the change is only the user making the same thing being asked every semester for the internship program.

b) **The web application and content management system**

The development of the web application using Web 2.0 structure in the Wordpress platform that enable dynamic functionality in the website but keep the operation invisible from user. This will provide more flexibility and interaction between user and the FAQMaS as there is many functionality within the process. In addition, the used of content management concept which is the taxonomy within the application has made the web application more friendly user. By categorizing the topic, the content can be easily identified and access by the user so that they can immediately obtains the answer for their issue.

1.4 Relevance of project

The relevancies of the project are as:

a) Platform for collection of information

The project aim is to develop a platform that enable the management of questions and answer as to cater for redundant same questions asked by intern to the CSIMAL's staff and UTP's lecturer.

b) Impact of redundancy issue on CSIMAL staff and UTP's SV

The FAQMaS will be the source of reference related to internship issue that is based on others experience which sometimes not cover within the guideline. Interns only deals with the staff if they required further assistant. This will allow more work hour on their personal task which positively affects their productivity.

c) High reliability of information's delivered

Another core highlighted in the application is the value of the answer and info delivered to visitor which is following the official standard by CSIMAL as to avoid multiple views giving by different people.

1.5 Feasibility of project

The project feasibility explained on the possibilities to complete such project within time of planning, considering the factors which can assist or hinder the completion of such project.

1.5.1 Technical Feasibility

The development of the web applications will apply:

- a) The familiarization in using Wordpress web application and related component.
- b) Information on hosting and server maintenance for live action.

1.5.2 Operational Feasibility

From the perspective of operation, the focus of the feasibility aspect is directed on the application of the system as it finishes the development process. The use of the web application will be used as long as it comply with the CSIMAL requirements and standard. As basically, the development phase do consider all the aspect required following the standard prepared by the CSIMAL itself.

1.5.3 Timeline Feasibility

The development of the web application will be divided into two main parts. The first part is the first four month starting from May until August 2012 that will focus on the documentation and data collection part. After that, the development will be continue from September until December 2012 based on the design and data collected earlier. Hence, total of eight month will be allocate to finish the applications and ready to go live.

CHAPTER 2

LITERATURE REVIEW

2.0 Chapter Overview on Introduction to FAQ

Frequently Asked Question (FAQ) is a set of frequently asked or questioned by people regarding the same issue. According to Burke, R.D. (1996), FAQ is a consensus of opinion among a group on some common question and make that answer available, particularly to new comers to the group who may otherwise asked the same question again and again. In other way, it's the process of collecting frequent asked issue, compile and recorded so that, the others can refer to that set and obtain the answer without the need of asking it. Realizing the benefit of such concept to people, hence, bring to the development of FAQ concept. Leidner, J.L. and Callison-Burch, C. (2003) explained that FAQ is question answering system which retrieves a textual fragment from a document collection that represents the answer to a question of an active field of research. In a way, developer intends to provide the quick solution for user issue as they used the FAQ facilities.

Other than that, Juan, Z.M (2001) stated that the aim for FAQ question answering system is to find the best question which is the most relevant to user's query and return the corresponding answer to user. Looking at this, Juan's research highlighted that FAQ concept can be develop into a system that will provide most relevant answer to user' issue. The system works by user selecting related question to their issue, and the system given out the answer. As explained by Schmonsees, R.J. (1998) in his paperwork, for each question is linked to a corresponding answer and each answer is linked to appropriate other questions, answers, topics or external information.

2.1 The Applications of FAQ in Internet

The development of technology with the application of internet is life has made the applications of FAQ concept become more reliable as source of reference. Research by Hsu, C.H. (2008) with the rapid development of internet the Frequently Asked Questions (FAQ) System has become the main bridge between enterprise and customer. In a way, the system does assist the people that come into contact with specific issue of a domain while browsing the internet and can directly find the answer. The implementation of FAQ in website also happen due to initiative of admin to answer repeating common question regarding certain issue, the same as the finding by Finkelstein, A. and Sommerville, I. (1996), where they discover that FAQ have grown out of Internet newsgroup where participant tired of seeing the same question repeated by newcomers by providing the list of canned answer to the most frequently asked question.

2.2 The Application of FAQ in Actual System

The concept of collecting the question and answer to help in assisting business process can be fine in certain organization. Other than just used as source of information in website, there is effort in developing FAQ concept into more sophisticated system. Research done by Zhang, M., He, T., and Yang, F. (2009) manage to point out that the application of answering system based on question by user using a knowledge database. The system is applied by Massachusetts Institute of Technology, where the knowledge database is adapting the FAQ concept is providing information to the student and staff of the institute. Another application of FAQ concept in application system is the FAQ Finder applied within log files for the local system of University of Chicago. The effectiveness of the system has been tested by Burke, R., Hammond, K., and Kulyukin, V. (1997) where the result returned more than 50% of the question is automatically answer correctly when user asked. The rest is still untested however has proven a significant expected success rate regarding the effectiveness of the FAQ concept.

2.3 Taxonomy in FAQ

One of the major concerns in the applications of FAQ is the issue of effectiveness for the system to help user find the question. Discoveries by Yang, S.Y. (2008) highlight the failure of FAQ sites to provide effective mechanism to assist the user as they need to pan through long list of FAQ. Hence, to cater for this, the Industrial Internship FAQMaS will implement the core structure of taxonomy as the background of the system, where the information and knowledge shall be arranged accordingly. Based on the same concept, Chung, S.L. and Chien, L.F. (2003) in their research of Automatic Query Taxonomy Generation for Information Retrieval Information, found that query taxonomy can provide a basis for the in-depth analysis of users queries on a larger scale which benefit many information retrieval system. The same structure to search for related information in a topic. The concept also enables the content of a system to be properly arranged into a specific class or domain. This is agreed by Bishop, M. and Bailey, D. (1996) from their research on Critical Analysis of Vulnerabilities Taxonomies which define taxonomy as a sequence of decision procedures which classifies each state as exactly one tuple. Supported by Yoshioka, T. (2001), stated taxonomy as representation aspect of information coordination via genre that improves work process, in his Genre Taxonomy: A knowledge Repository of Communications Actions.

2.4 Characteristic of Good FAQ

Going further in understand how FAQ can affect ease of information and knowledge dissemination to the user, the aspect of quality in arranging the FAQ will play a big role. Adopting the idea of how the usability of FAQ should behave, Hammond, K., Burke, R., Martin, C., and Lytinen, S. (1995), on the high ground, FAQMaS is to use the existing on-line resource of questions and answers given to provide a simple and natural interface between user and information networks. Take article by Brantner, E. (2010), always put the information as your top priority in designing FAQ material. Expect that the user want information to be delivered quickly and easily and for that, all distracting element on the page should be remove. In the same article, Brantner do recommend to divide the content into category, where here, highlighted the functionality of Ontology concept is FAQ design as to support its usability.

Next in the list of is the use of the term of FAQ itself, where, according to Hamill, D. (2009), the use of the FAQ acronym sometimes can be confusing for visitor that likely to encounter it . So, for this, it's recommended to include the whole sentence or 'Common Question' as to make it clearer. Other than that, a good FAQ is the one that deliver information directly in simple sentence. As suggested in article by Avangate.Com (2007), to be concise to offer necessary information in the last amount of word and time is the best way in delivering FAQ effectively.

In addition, another point to be consider is the used of hyperlink to show user the answer for the question. Thompson, S. (2006) stated that by offering hyperlink to other page should be more convenience especially if the answer is located specifically in other page. By this, the user will not need to search the page again for that page. Lastly, don't forget to provide assistance in the FAQ page. As mentioned by Stephanie (2011), by providing contact information to the webmaster will allow the visitor to have information under the situation where they can't find related question and answer at your FAQ. In the same time, webmaster can also gather response and feedback regarding the page and act base on the response.

CHAPTER 3

METHODOLOGY

3.0 Chapter Overview

In the development of this project, the developer has adopted the method of throw away prototyping as its core framework. The implementation of this methodology also covers refining the project timeline planning, the data gathering technique used, and the development of the content structure.

3.1 SDLC Method of Throw Away Prototyping

The FAQMaS project is developed using the concept of Throw Away Prototyping (TAP) SDLC. The TAP SDLC is the development of a system which applies the concept of standard SDLC, however, this concept gives more attention on assisting the developer to foresee the prototype of the final product. The prototype is the web application without complete functionality. This SDLC concept enables the developer to have the FAQMaS first draft design purposely for evaluation and also can give the user the first look of what they should expect. As feedback is collected and changes are made, the enhanced prototype will be developed from time to time until everything is good to go. By this means a complete interface as well as all the functionality that passed all the testing and eventually ready for go live.

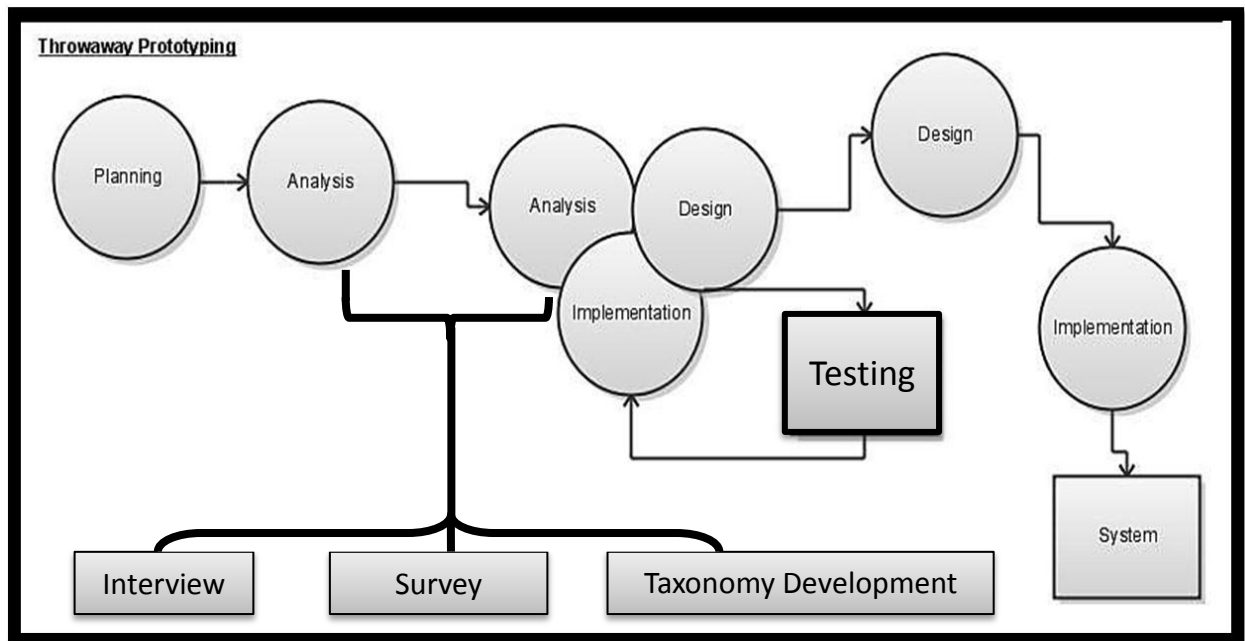


Figure 1: Throw Away Prototype

3.2 Project Activities

The project activities will explain on the technique of data collection and methodology selected for the analysis for this project. There are two main methods for the analysis part, which are the data collection phase and data analysis part. For the data collection part, two methods used to collect necessary input for this project:

- a) Interview
- b) Online survey

An interview session has been conducted between the developer and the representative from the CSIMAL, Mr. Azrul Hasyimi Zabidi. The objectives of the interview are:

- a) To inform and establish cooperation between the developer and the expert of the process, which is the CSIMAL.
- b) To gather background information of the expert, the department, on the process flow for the program.
- c) To acquire the assistant of the CSIMAL's staff on any information they have regarding any issue highlight by student regarding the internship program.

The interview went well and responses from CSIMAL turn out to be positive on the development of the FAQMaS. Moreover, the staffs willing to help in providing records for any questions arise by the interns to be used as data for the project.

The second method used for the collection of data is the online survey which directed to user, both interns and UTP staff (lecturer and CSIMAL staff). For student part, the survey was distributed to those currently doing their internship as well as student which done their internship. In the same time, another set of survey has been prepared for UTP staff which cover to CSIMAL Staff and UTP lecturer. The result obtain from the survey will be analysis in the data analysis part by applying the concept of taxonomy, where the model or category will be presented at the web application as to ensure the question is efficiently well organize, making the applications of FAQMaS become more user friendly.

3.2.1 Data Analysis

After all the data has been collected, the next process is to analyst all the response, both from the interview and also the online survey. The data from interview with the staff is helping in term of setting the pre structure of FAQMaS as to ensure that the scope and question that will be used is following the official structure by the CSIMAL.

In the other part, the results from the survey are used as to design the content of the FAQMaS, which is the FAQ part. According to the earlier plan, the question was arranged using taxonomy concept, under a specific category. The categories are based on process from the official flow provided by CSIMAL, as to assist in the finding of specific issue. The taxonomy concept is adapted with the respect of making the question list neater and of course, to increase the usability and reliability of the web application itself.

3.2.2 FAQMaS Design

Directing to the aspect in building of the web application, the structure is based on the UML diagram. Like always, the aspect of user friendliness is the key point in building a good system. Aspect of navigation, mapping of component, and also, arrangement of component do become top priority in designing the FAQMaS layout. The design will have the questions arrive under its specific tag according to the flow, and then, visitor can go further into that specific flow to see related frequent asked question by the student. Clicking the question will bring them to the answer, which is direct and short, but precise.

3.2.3 Implementation

The project design now reaching the part of realizations, where the system is under construction. Using the Hyper Text Markup Language (HTML) as the language, it will enable the web browser to display the web page of the FAQMaS. In the same time, to maintain the background and the arrangement of the content, the function of CSS and JavaScript come in to the picture. According to the article by DifferenceBetween.Net (2010), CSS is much simpler and basic when it comes to web page formatting and designing while JavaScript is more advanced, and offers more functions and interactions for a web page.

These two supports will add more attractiveness to the webpage of FAQMaS as developer can play with suitable design theme and add some functionality as according to the design. Several prototypes are prepared and then test until it satisfy the CSIMAL requirements before a final design prepared and launch.

3.2.4 Maintenance and feedback

Post-launch phased where the system will be monitor for any faulty and keep the records of feedback from visitor. Take into consideration of the feedback to ensure the web application can serve properly. In the same time, content management will be done to update for any new question to be add or in case of changes on any part of the CSIMAL flow, quick update must be done.

3.3 Taxonomy Development Process

Taxonomy development process is the stage where the developer will study how the concept can be applied within the content. It is a step by step application in developing the taxonomy structure and then, applies it to the specific domain or field. As in research by Whittaker, M. and Breininger, K. (2008), taxonomy is method in consistently organizing and categorizing certain information so that the searching process can be simplified. In a way, the user doesn't need to used complicated or complete vocab but still manage to retrieve things that they try to find.

In developing taxonomy, this research will adapt the steps introduce by Whittaker, M. and Breininger, K (2008) which later on supported by Harris, G. (2008) in his article. The original steps cover seven steps, which varies according to the project requirement. After cross check with the implementation of this project, only five steps are adapted. This is based on the suitability with the content and limitation such as time constraint. The five steps in Taxonomy development:

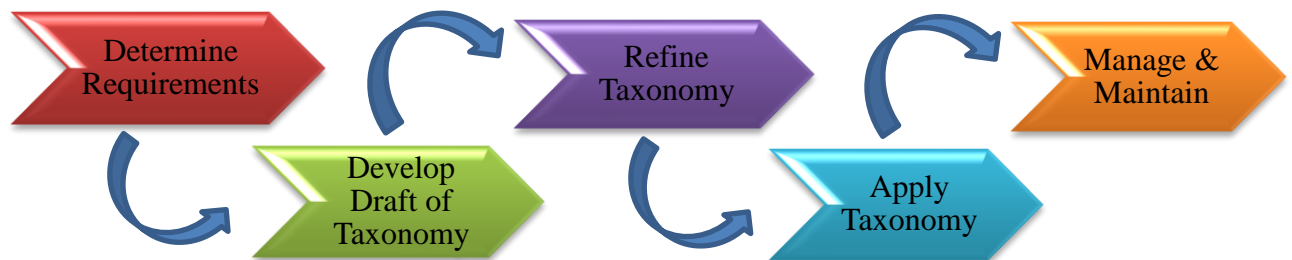


Figure 2: Steps in Taxonomy Development Process

As to understand what the role in every step is, this research will go in details of one by one, starting with:

3.3.1 Determine Requirements

The determinant of requirement requires developer to define the basic information about what the project is all about. The basic information covers the aspect of defining the scope of the project, the purpose of having taxonomy, and defining the type of format for the content.

The basic information must be clear out before all the others step can be start. Hence, to sort things out, developer first need to identify the audience that they serve. From there, the audience will provide all the information necessary and act as the guideline or source of reference for the structure of the taxonomy.

For the development of Internship FAQMaS, for the determinant of requirement, the developer has prepared a research form in collecting the core content of the FAQ. The FAQMaS is developed concerning three target audience, which are:

- The lecturer or UTP' Supervisor
- The UTP interns
- The CSIMAL staff (Previously known as SIIU)

For these subjects, the developer has given out the research paper on the content identification, by listing out the main three component of the internship process. The components cover the Pre Internship, During Internship, and Post Internship.

3.3.2 Develop Draft of Taxonomy

After identifying the basic information of the content, the next steps in the list is the preparation of the draft of the taxonomy. As implemented by Whittaker, M. and Breininger, K., the best way in developing taxonomy is by starting with the high level point first. The point will highlight the major sector that developer wants to point out. The best approach is by not having too much of starting subject as it would be multiply later on.

After defining the first level, the next thing to do is start to refine the area of search to a smaller partition. The approach for this step can be implemented using either from upper to bottom, or from bottom to top. This depends on the developer whether which approach suit the content that he/she have.

Once the approach is selected, the developer starts to identify the scope within the sector that the taxonomy should cover. The scope is made using simple term that can represent or distinguish that specific part. The recommendation given for this part is to apply any well-known terms by the public, again, depending the scope it covers. Probably, some might need a technical terms which suit for technical people.

3.3.3 Refine Taxonomy

The draft of the taxonomy created previously is review during this stage. The review process involves the user as to collect user comment and feedback. Upon this stage, any changes from the feedback will be applied to ensure that the taxonomy is created based on the correct specification or class. This to ensure every terms and information is properly rooted and will not lead to miscommunications once the taxonomy is applied.

The taxonomy root can be expand or go deeper depending on the developer choices. One relation to the next might continue the taxonomy and end up will a lot of details going around. Hence, the developer needs to put certain limit on how deep the taxonomy on specific topic should go and move to the next topic.

3.3.4 Apply Taxonomy

Once the taxonomy structure is prepared, it is deployed for use. The taxonomy assists in searching activities such as locating specific content in a webpage and finding location on a map. In some way, the taxonomy also helps in providing understanding on the certain relation that exists between one concept and topic to the next.

Other than highlighting the relation between several concepts, the same taxonomy also can be applied in multiple functions. The limitation for this depends on how specific the content covers. This is because only high level of taxonomy which not covers deeper aspect of one function can be applied to many. As when it reaches to deeper level, the taxonomy becomes more unique for that specific domain. This means the one that applicable to many function only cover the high level part.

3.3.5 Manage and Maintain Taxonomy

Once the taxonomy is launched, it is always the best to make it interactive. Interactive in such way that the content is managed and properly maintained instead of the page becoming a static page. The application of taxonomy enables plenty of content to be included and for that a full utilization of that abilities requires a management to be done.

A good management for taxonomy application is to have its own team to monitor and be in charge of it. The task for the management team is to update, sort, add and delete the content from time to time. Under certain requirements, such as change of policy, the content of taxonomy must be changed too. Other than that, introduction of new concepts, terminology or concept flow also examples of requirements that require taxonomy to be properly maintained.

3.4 Key Milestone

Final Year Project 2:

- Development Phase (Content and structure design) : Week 1- Week12
- Submission of Development Progress Report : Week 6
- Pre-SEDEX : Week 8
- Submission of Dissertation Draft : Week 10
- Submission of Dissertation : Week 11
- Oral Presentation (VIVA) : Week 12
- Submission of Technical Paper : Week 14
- Submission Project Dissertation : Week 14

3.5 Gant Chart

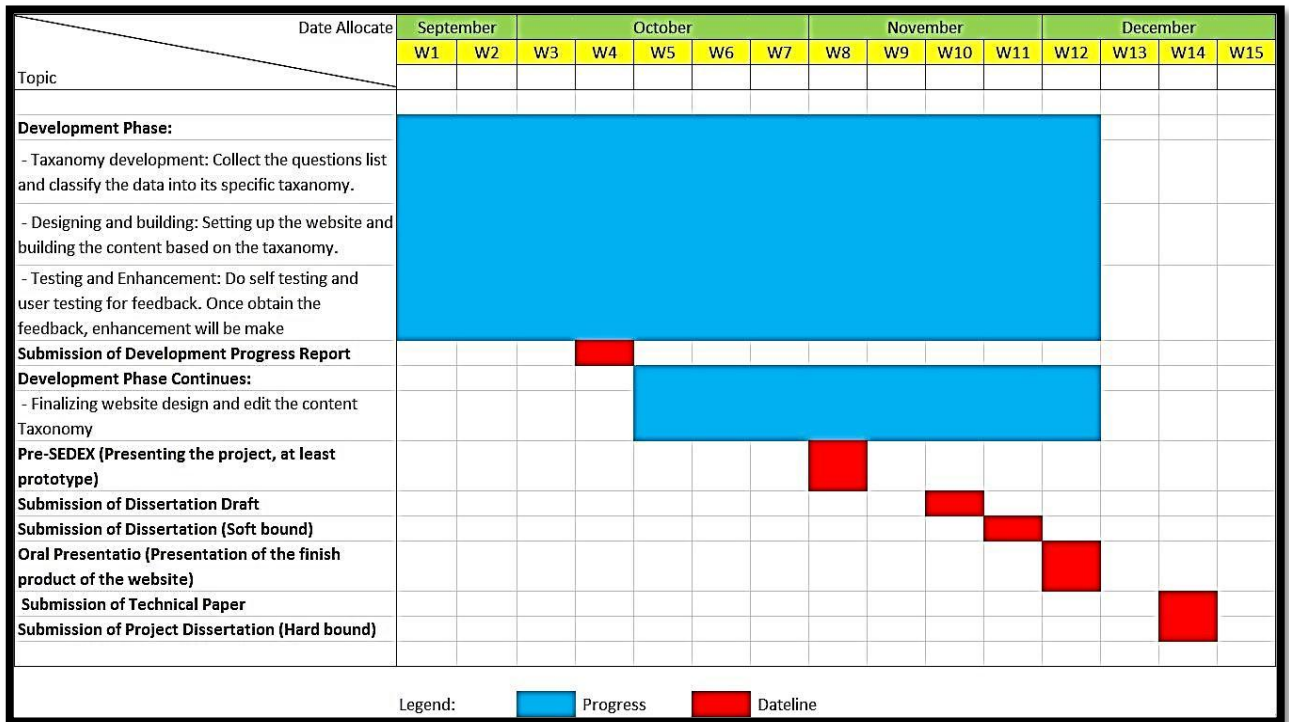


Figure 3: Gant Chart of FAQ Management System (FAQMaS)

3.6 Tools Used

In the development of the FAQMaS, it involves the interaction between user and the content management system through the graphic user interface. As for that, the development of the application will have two main parts, the user interface and the content management system. The tools used in developing both part are:

- Wordpress – The main development platform where the user interface is structure and build. Comes with all the necessary tools within the platform, the developer need to gather the necessary plug in. Customization also can be done to the plug in by doing some scripting to alter the function following the developer need.
- WampServer – The mini server which assist developer to develop their web application within their local machine. Acting like a webserver, this application combining the package of Apache which help in providing the web page to the requester, package of MySQL that responsible for database functionality for web component, and lastly the PHP that enable faster code processing as it have its own server before go to the browser.

On the content management system, the developer has used a special plug in for Wordpress which is the QnA that apply the FAQ basis structure. The plugin enable the collection of questions and answers made within its directory that act as the small database for FAQ. Does not limit to any number of FAQ, this functionality enable the developer to apply the taxonomy and define specific category to make it easier for user. By combining the QnA plug in and the design of the FAQMaS interface, the FAQ is now accessible and more reliable for the use of the user.

CHAPTER 4

RESULT AND DISCUSSION

4.0 Chapter Overview

This chapter presents the result and discussion of the applied methods. The result of the analysis is cover the process flow and the architecture of the FAQMAS. After that, this chapter will cover on the details on the component of the FAQ taxonomy and also the interface of the FAQMaS.

4.1 Process Flow Diagram

Process flow diagram is the representation of the process movement of a project, from the input all the way to the output. The method also used to express the idea or design plan of a system. Instead explaining using words, the used of diagram assist in making things more attractive and easier. Referring to the explanation by Edraw (2012), process diagram can be called with different term such as process flow chart, process flow document, and other. However, all these conveying the same purposed which is the movement of the project process. Below is the process flow for FAQMaS from the perspective of user and the administrator:

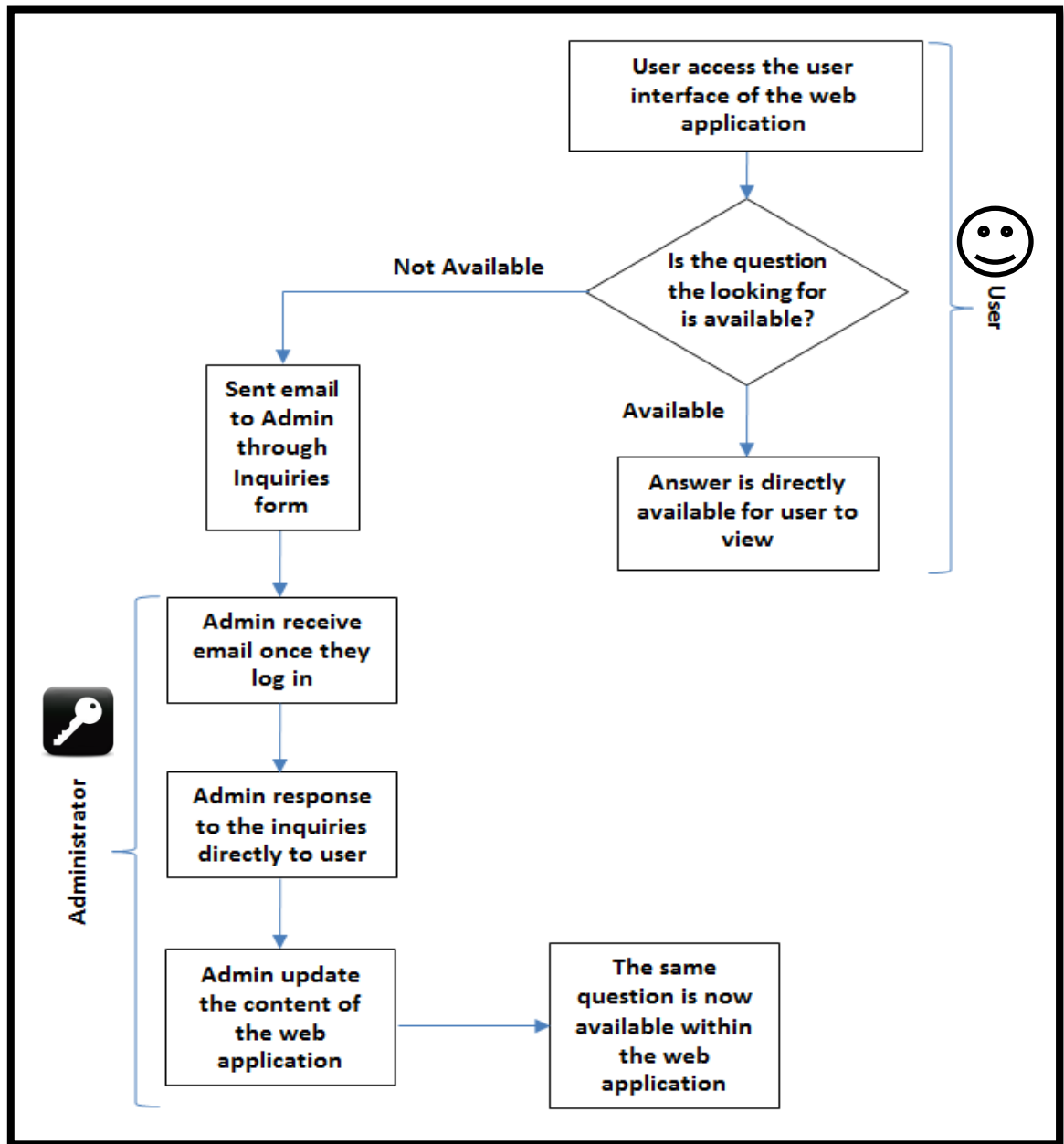


Figure 4: Process Flow for FAQ Management System (FAQMaS)

Another part of the process design diagram is the FAQMaS architecture. The function of this architecture is to highlight the module involved according to the role play by the personnel. In the FAQMaS, the role will be either User or Admin which then tight to a specific module of task. This module will highlight what are the action that can be done by the role and how it affecting the architecture. Below is the architecture for FAQMaS, where it shows the User and Admin perspective. In the same figure, the architecture demonstrates the process of data retrieval of the interface from the FAQ directory, where all the questions and answers are maintain.

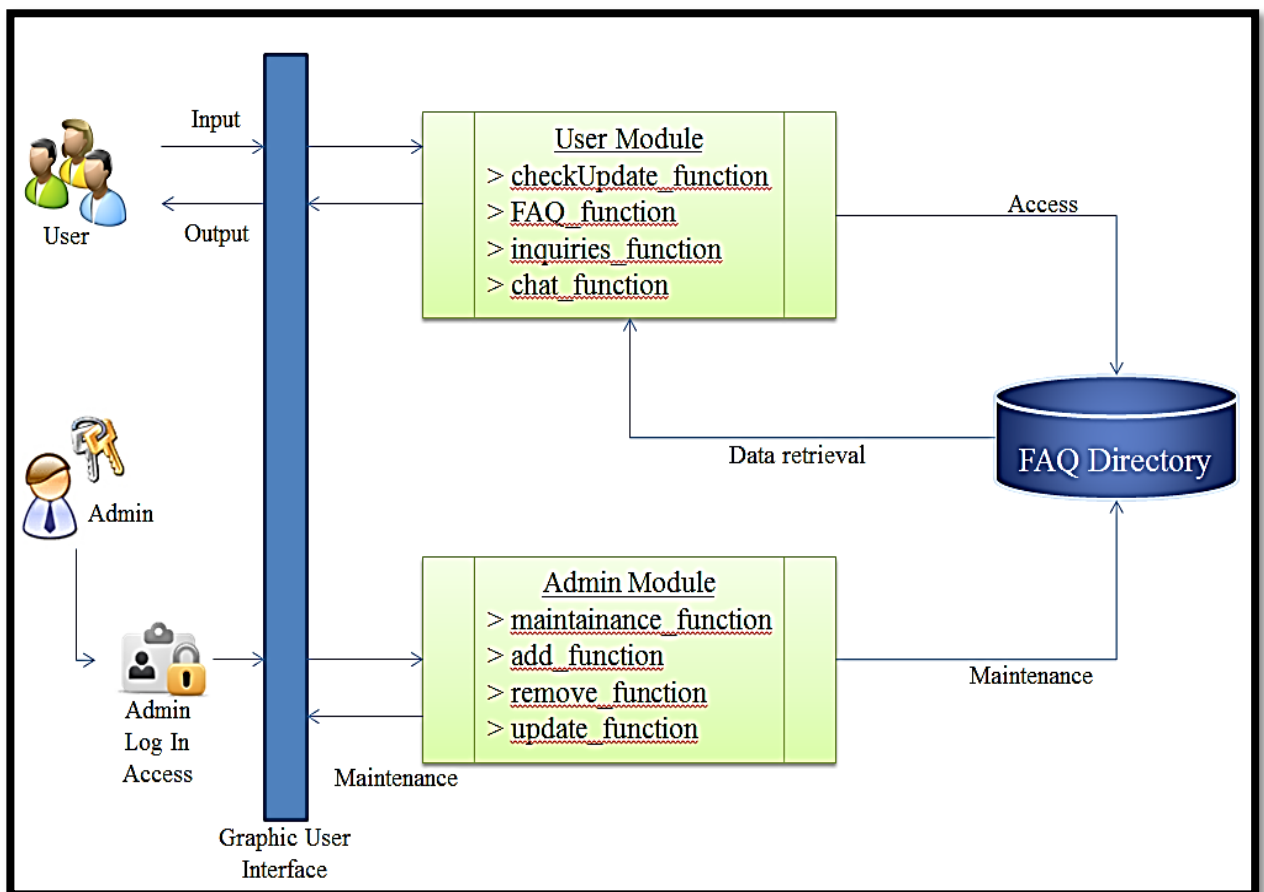


Figure 5: The Architecture for the FAQ Management System (FAQMaS)

Use case diagram is used to identify the role of user in a system. In addition, it highlights the doer and their role in effecting the system itself. For FAQMaS use case, the actor will be the Admin which have the access in doing the administration tasks from their access point, while the User will browse through the application from its home page following the point highlighted in the use case below.

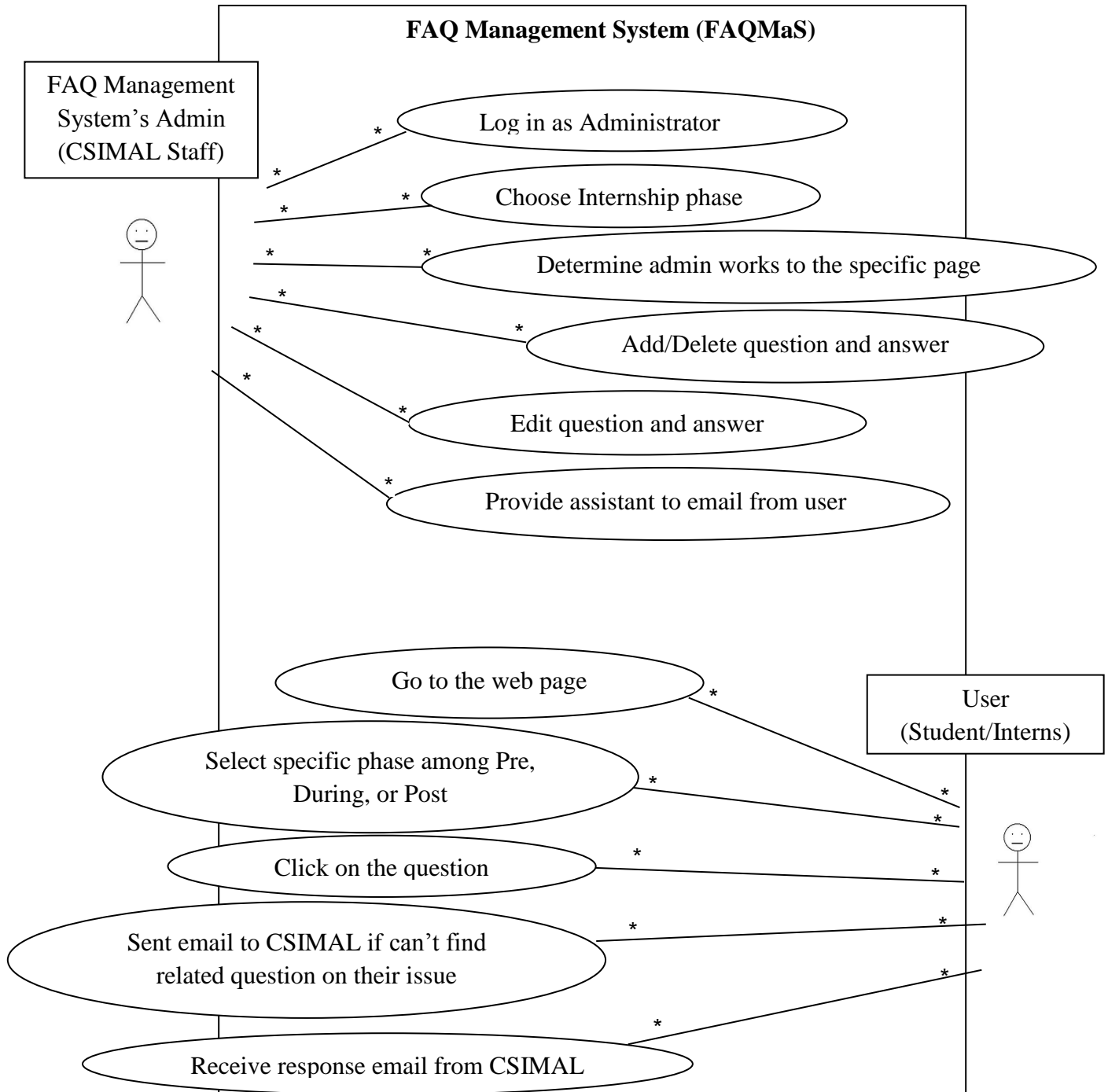


Figure 6: Use Case for FAQ Management System (FAQMaS)

4.2 Result Discussion of Interview

Previously mentioned in Methodology part, as one of the means of data collection, an interview has been done with the representative of Centre for Student Internship, Mobility and Adjunct Lectureship (CSIMAL), which is Mr. Azrul Hasyimi Zabidi.

The data collected during the interview showed that when CSIMAL received any issue or question from intern as well as lecturer, the current procedure involve is direct communication. By that means, the direct communication involves one to one approach by the CSIMAL staff to the asker through phone call, personal email, as well as face to face conversation. The analysis done showed that, CSIMAL entirely depends on these three mediums to deliver information requested by the user and lecturer. For situation where CSIMAL need to do announcement on any specific matter, the choices of medium used to deliver the information is the E-learning. From there onwards, the

CSIMAL do prefer these methods as for them to response to every issue as soon as possible. Depending on the availability as well as responsibilities during that specific time, CSIMAL staff needs to jump between their own personal task and answering the issue. In a way, their responsibilities towards both task demand high attention and when redundancy occurs will affect CSIMAL staff productivity generally.

On the second part of the interview session, Mr. Azrul highlighted on the flow of the internship flow, which comprise of several components, which are:

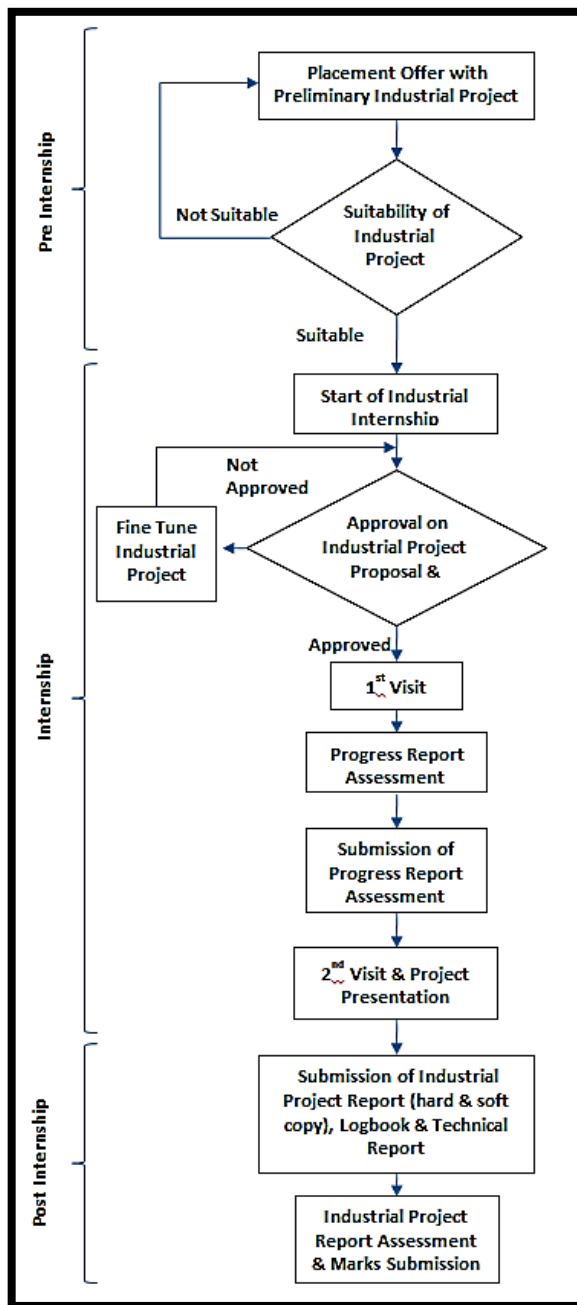


Figure 7: Industrial Internship Process Flow

Based on the interview and material provide by Mr.Azrul, the developer came to conclusion that the development of the application should focus directly on the internship flow. This is because the fact that the flow has all the component and remarks which has become the important key to towards the overall process. On top of that the same flow is given to the intern to keep themselves align with the entire planning of the internship period. For development of FAQMaS, the adaptation of the taxonomy concept is applied based on the flow given in the Figure 7. As included in the structure of the web application, the user will first select the stage or phase of the internship, exactly the same as being stated within the flow, which are:

- Pre-Internship
- During Internship
- Post Internship

The selection of the internship level will help both the user and the admin to easily identify what is the stage related to the issue they want to search about. From there, user will be present with the list of processes under that specific phase. Here, user will then selecting which related process they want to know, and after that, arrived at the list of questions. Upon there, user needs to click the question to be able to see the answer for their question.

As the conclusion from the interview, the developer manages to draw out the basic idea of the FAQMaS with the information provided by the CSIMAL representative. The draft of the FAQMaS flow is made referring to exactly how the flow used by CSIMAL. This will enable, the admin of the FAQMaS which is the CSIMAL to easily synch up the system with their business flow for future ease.

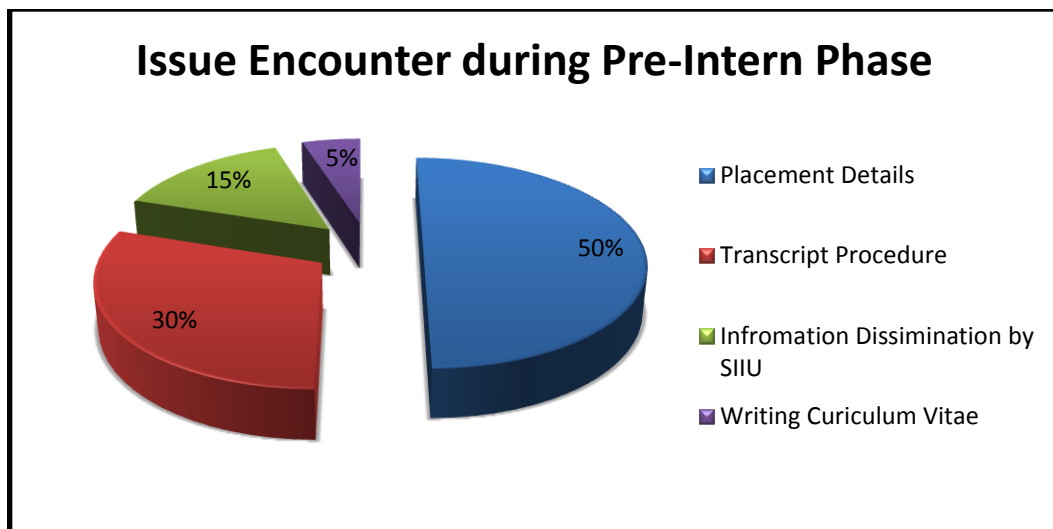
4.3 Result and Discussion of Survey

The survey question set is distributed to the intern as well as the student that had their internship previously using a public access survey facility. The objective of the survey done to the interns and students:

- To collect all the main issue faced by student on the main three phased of the internship stage.
- To understand interns and student point of view on CSIMAL method of information dissemination.
- To rate interns and student satisfaction level on CSIMAL response time on their issue.

The survey is divide into three main part, resemble the three main phase of internship stage. The first part of the survey is focusing on the pre internship phase with the total of 20 correspondents have replied back the survey.

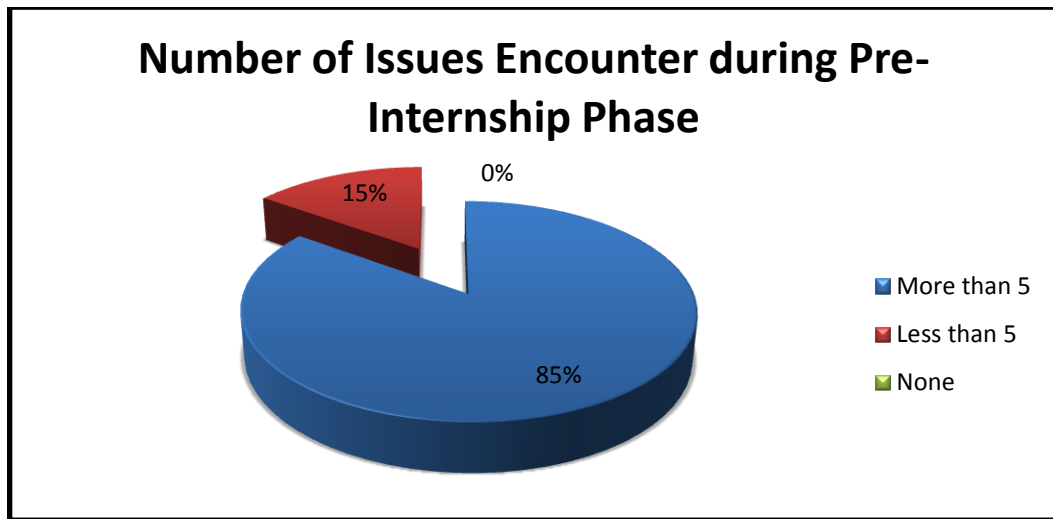
Question 1: What are the issues you always encounter during the pre-intern phase?



High number of correspondent experienced issue regarding the placement where they having difficulty to obtain the contact details to apply for position. Next, student didn't being notified on the dateline to submit resume or CV until they missed the time. Other than that, the transcript release by Registrar that takes a lot of time which affected their

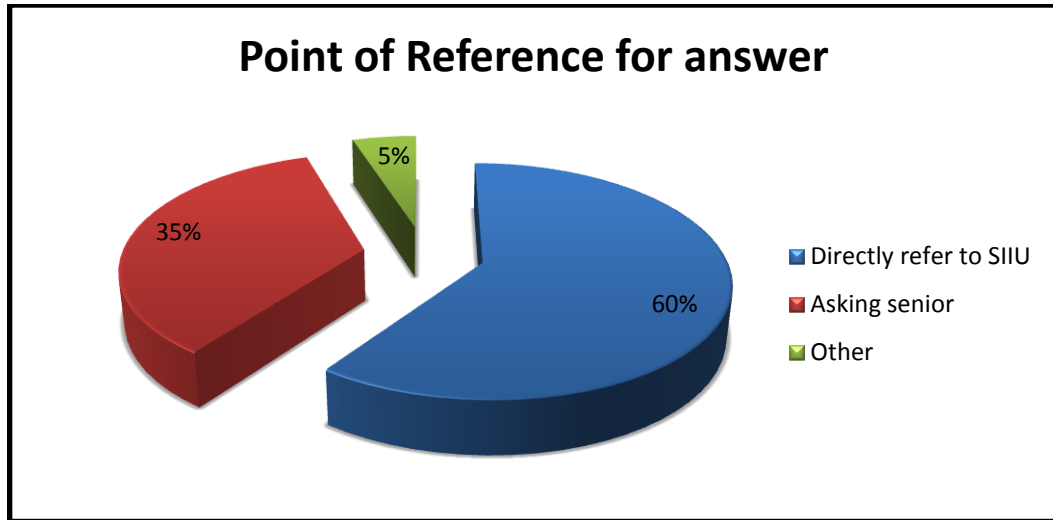
application to company that needed. Comment suggest more efficient period and reduce the price as it consider expensive for student. The rest showed that some of intern experience unreached info to them regarding any announcement and documents update. Lastly, small potion experience difficulty in preparing expected resume or Curriculum Vitae. As to conclude, the issue happened during the pre phase is revolve around the process of preparation in applying for placement. Lack of information on host company details somehow limits the student to apply for the placement which needs urgent attention from CSIMAL.

Question 2: Roughly, how many issues you encounter during pre-internship stage?



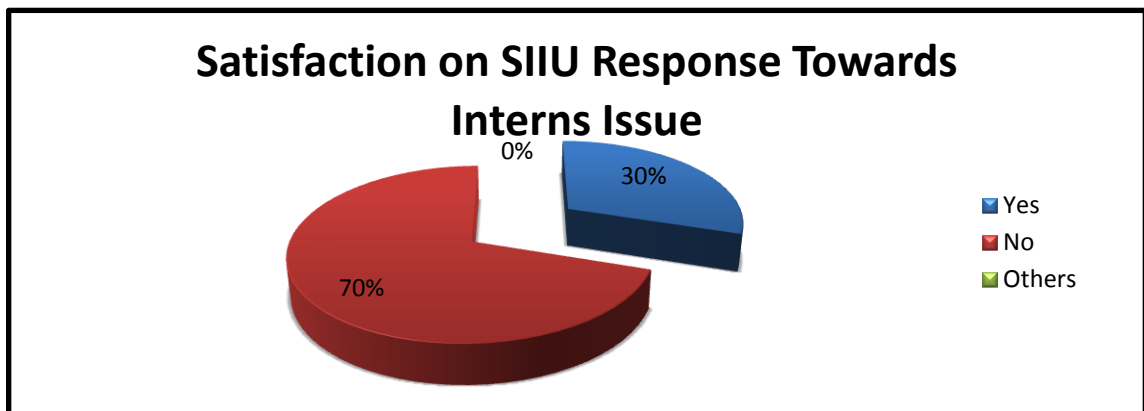
During this phase of internship, the number of issue encounter per intern is not as more than five indicate that no yet many problems occur earlier. This probably due to the internship briefing by CSIMAL that provide opportunity for student to make things clear if they have any problem. In the same time, there is not much of process involve making the issue number is low, compare to when the intern start their internship period.

Question 3: How do you obtain the answer for the issue?



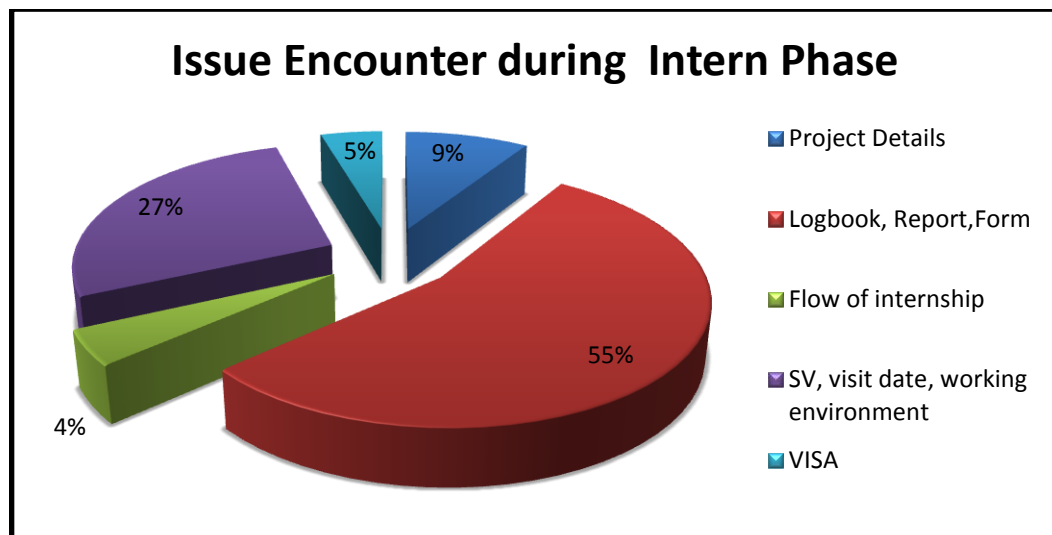
The result showed that CSIMAL retain the main reference for intern regarding any issue, and come in second is asking from senior. The reason behind that is under certain situation, CSIMAL failed to understand the issue and only people that experience it before can help. That's why some intern prefers to ask from their senior. In addition, complaints on late response from department become another factor why intern prefer alternative source of reference. The rest choose to follow directly with their company requirement as CSIMAL didn't give any solution. As to conclude, intern should always have other source of reference in case of failed to obtain response from CSIMAL. In term of the department, response to inquiries needs to properly monitor to avoid bad reputation on the department later on.

Question 4: Do you think that all the response from SIU is exactly what you need?



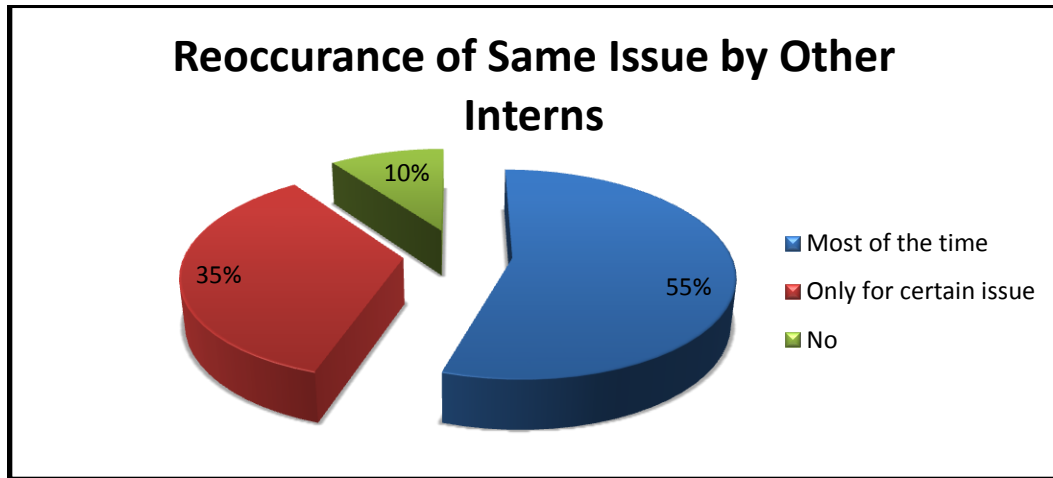
High response on dissatisfaction on the answer from CSIMAL indicates that the department didn't provide answer to intern issue or the answer is not clear. Other possibility is the staff currently swamp with their on responsible which limit their effort in going deeper for every issue. As for this, it is recommended for CSIMAL to give more emphasis on interns issue as to ensure they remain their credibility. It is suggested also for the intern to understand the department situation and consider to give and take while expecting for the response. Proper follow up will be a good action for both sides.

Question 5: During the internship period, what are the issues you encounter? ****This point onwards is focusing on second phase of internship, during internship.**



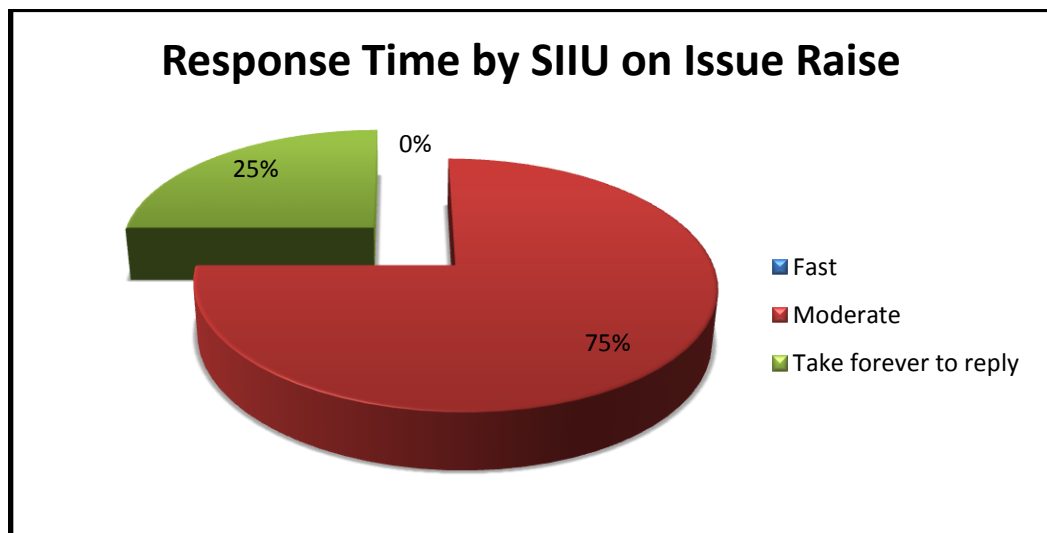
The highest issues cover the aspect of logbook, forms, and report. Generally, the issue revolves around the format and structure expected for logbook and reports. For forms, requirement such as signature and dateline become main things. Second and closing is the details on SV and visit, and also the working situation. Feedbacks show some of interns having issue in their daily task which lead to insufficient time to prepare for visit presentation. Hence, the intern hoping for early and fixed schedule for meeting as to ensure they can plan ahead and easily setting the meeting with their host company SV. Others issue is about unclear on project details and the flow of internship despite everything has been prepared by CSIMAL. For exchange interns, VISA issue is highlighted due to satisfaction towards CSIMAL response regarding this matter. So, for future, it is hope that CSIMAL with the help of intern strive to clean this things out.

Question 6: Do you ever come across with others interns (either same company or different company) facing the same issue as you?



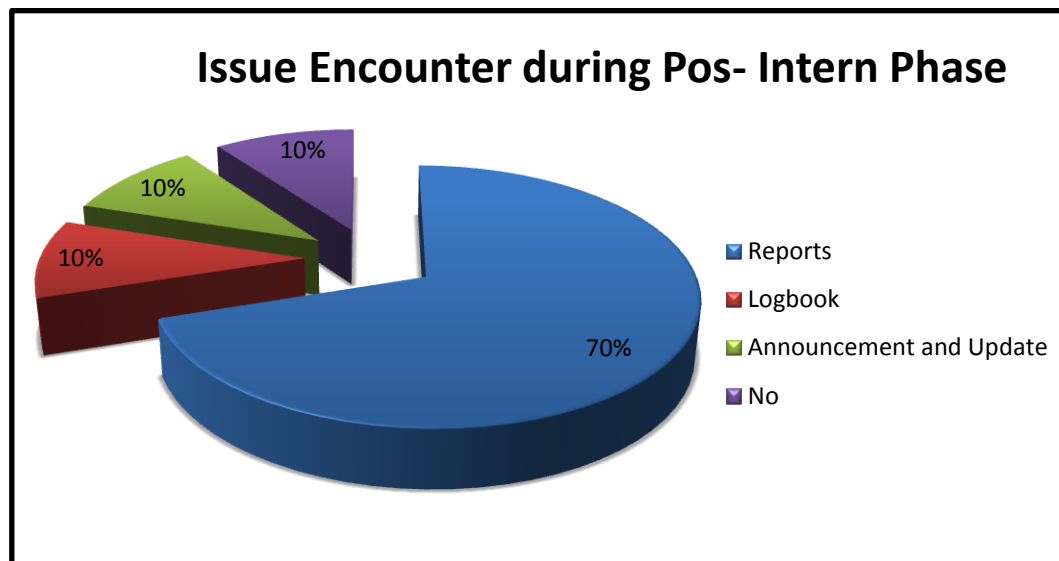
This question pointing out the occurrence of redundancy issue happened at different placement and the failing of information to reach different locations. An intern facing issue and manage to obtain answer, however failed to deliver the info to fellow interns. Don't know the situation faced by other, the solution come to halt. Hence, it is recommended to have medium that disseminate the info entirely to others of different places.

Question 7: For any inquiries that you raise to CSIMAL, what is the response time to get the feedback on the issue?



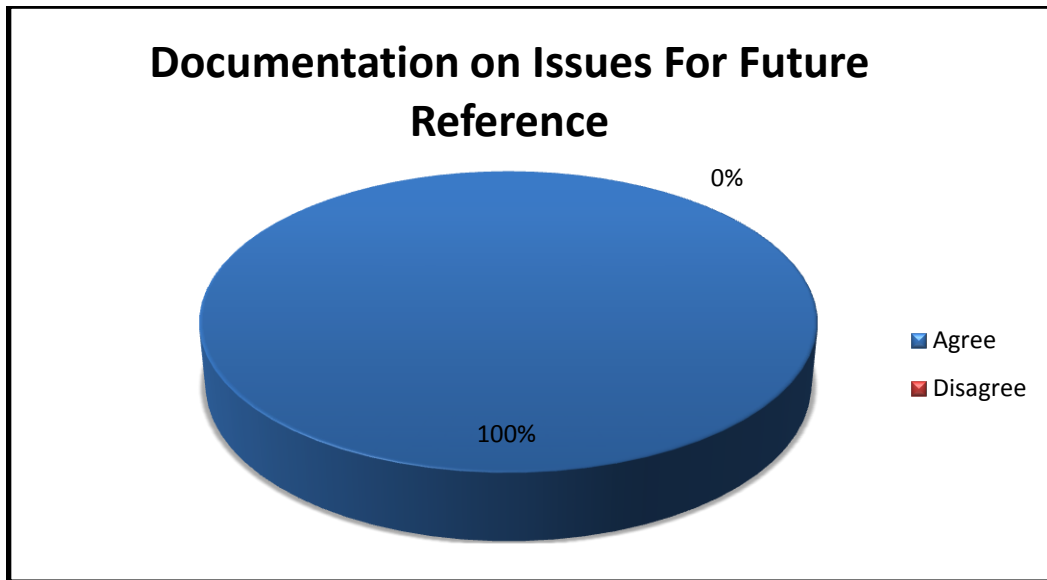
The survey on CSIMAL response time towards intern issue shows a moderate time taken. This shows that CSIMAL do have other priority and need to cope to both needs. As for that, any party is expected to give some time when dealing with CSIMAL. In additional, do a regular follow up to speed things up. Another option is to have an alternative channel or medium that act on behalf of CSIMAL to advise any issue related to internship for the intern that's really need it.

Question 8: As part of internship requirement, you are needed to send the internship reports. For this, can you state any issue that you encounter during this phase? ****This point onward is focusing on post-internship phase.**



Feedback on the most issue that faced during post intern phase indicates that the issue revolves on reports for internship. Most interns concern on the relevancy to have multiple reports (final report and technical report) as the content are almost the same. For this, CSIMAL is advice to state the functionality of every report or forms required clearly as to provide logical reasoning to the intern. This is to ensure the interns can really understand and properly plan their time. The rest concern is on the issue of dateline submission for logbook and report which is too close with the last day of intern. The intern is advice to properly approach the department to further extend their concern by providing logical reasoning on the extension of the dateline.

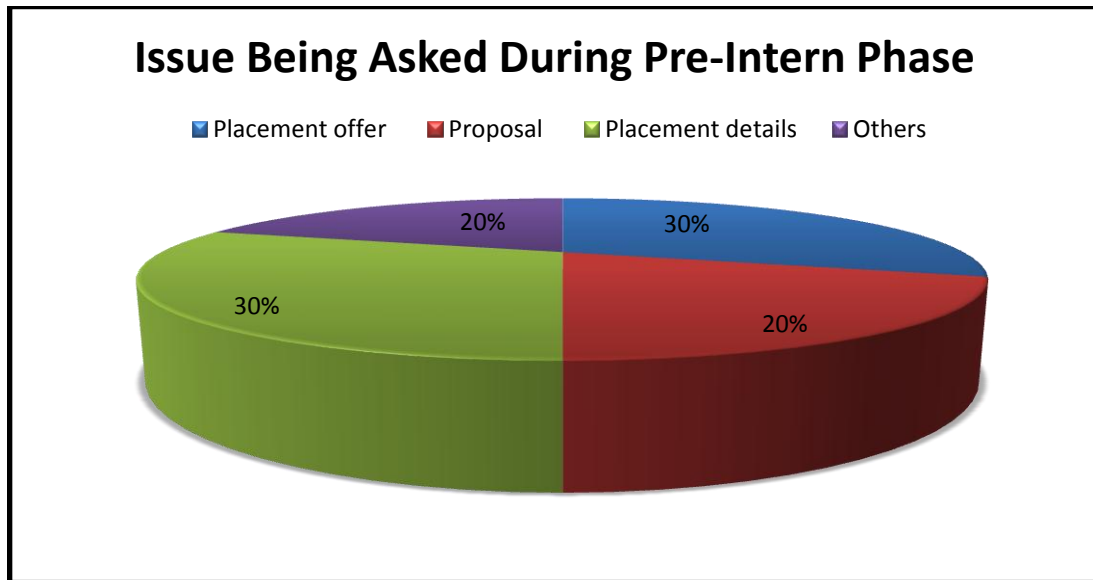
Question 9: Overall, do you think that all the issue faced by the interns should be documented for future purpose?



All of the respondent support the idea to have the issue be recorded and make it available for others to access it for future reference. In a way, this effort can ease CSIMAL responsibilities and reduce redundancy effort in answering repeating issue. In the same time, it will enable user to easily obtain information without having to wait for other to response which will cut the waiting period short. Only for certain matter which required CSIMAL clarification can directly refer to the department following the procedure.

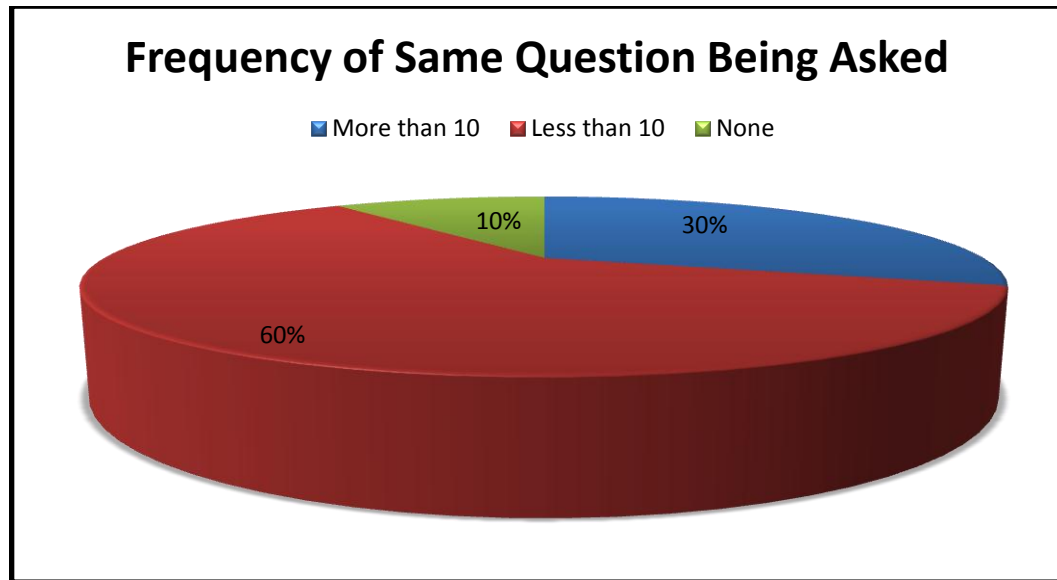
Another set of survey has been prepared by the developer to the CSIMAL staff and UTP's lecturer. As the sides that receive the question from the interns, both party play major role in providing another view of the situation. The second set of survey is involving the participation of 10 candidates and the result of the survey:

Question 1: What type of question that you usually encounter during the pre-intern phase?



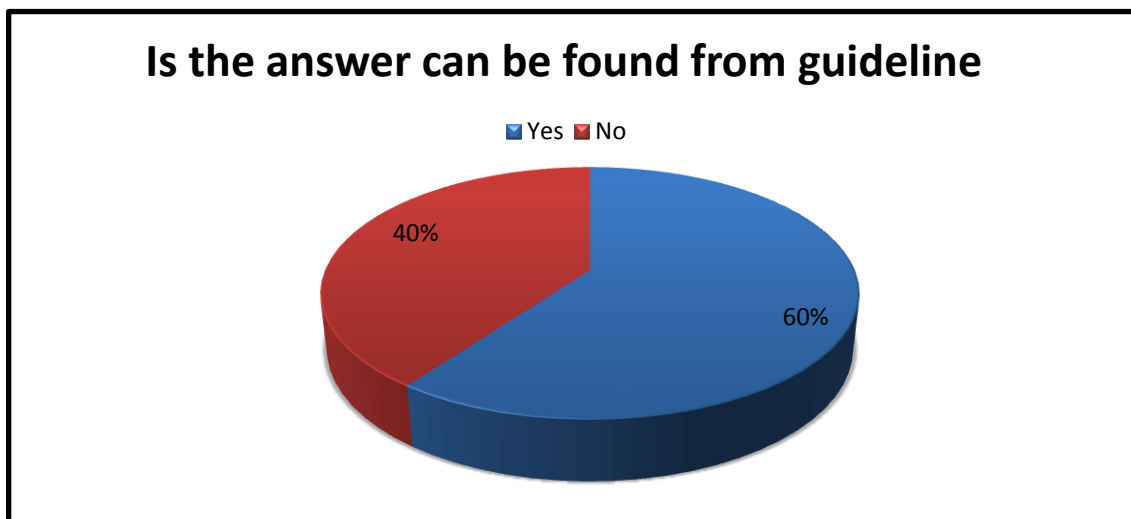
The highest frequent of question received by the staff are mostly regarding placement due to the time period focusing on finding placement for internship. It is on the pre internship period where every intern tries to cope with the dateline by the CSIMAL. The rest of the question mainly covers on the proposal and other requirement such as compatibility of company with the course of the interns. This is mostly concern on the internship project that can be done whether it fit the course of the interns or not. By that, CSIMAL is expected to have full of hand on this kind of issue as every interns are rushing to find their placement before the dateline.

Question 2: Can you roughly provide the number of how times you being asked about the same question?



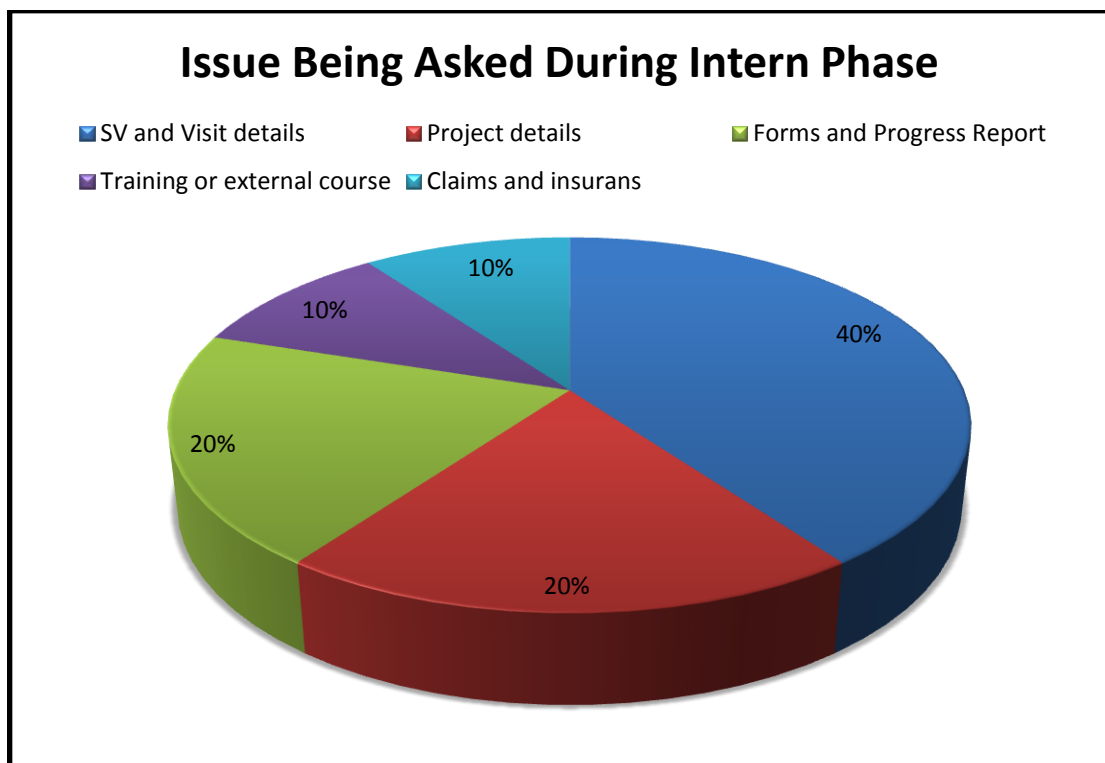
Reoccurrence of the same issue is being asked to the staff, especially for those that mostly deal with the student or interns. Since they are the front line staff, the number of same issue asked is higher than the higher level. For most of the time, the higher management will handle issue related to exchange program which require higher authorities decision. Hence, every question is rate based in the decision making authority whether it is on the first line staff or required more superior decision.

Question 3: Do these details is included in the internship guideline by SIIU?



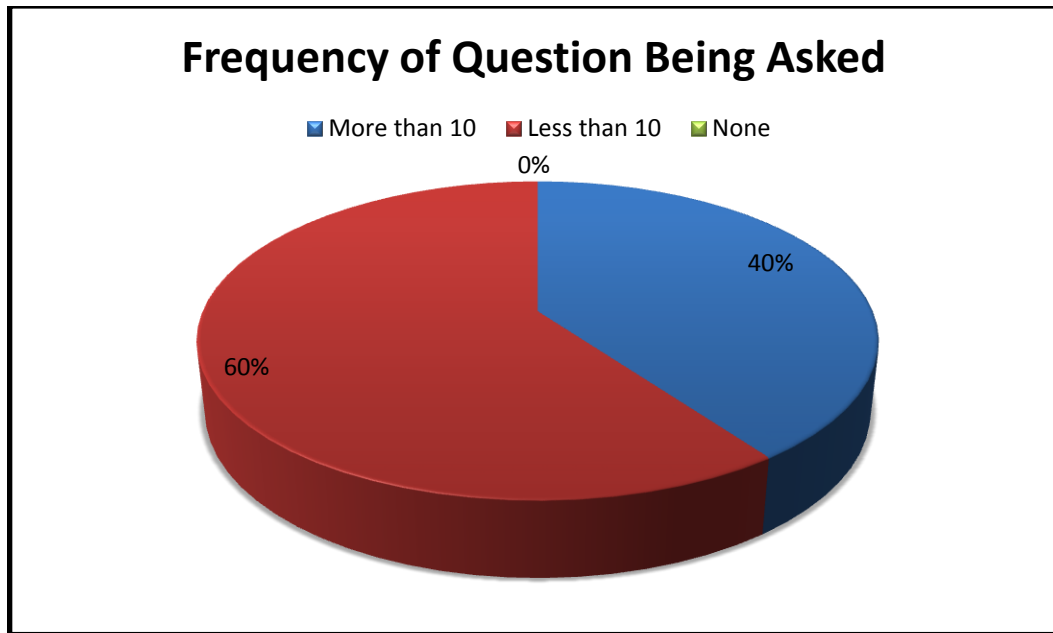
The answer for the issue asked is mostly related to flow of the intern and also the process. All these things are cover in the guideline and student should find it clear if they read the guideline cover to cover. In additional, some of the details also have already explained during the Internship Briefing. This brings to the conclusion that, documentation provided is already complete and understanding on the documents should help the most. Interns are recommended to first refer to the guideline before asking directly.

Question 4: What are the most questions asked by the student to CSIMAL during this phase? ****This point onwards is focusing on second phase of internship, during internship.**



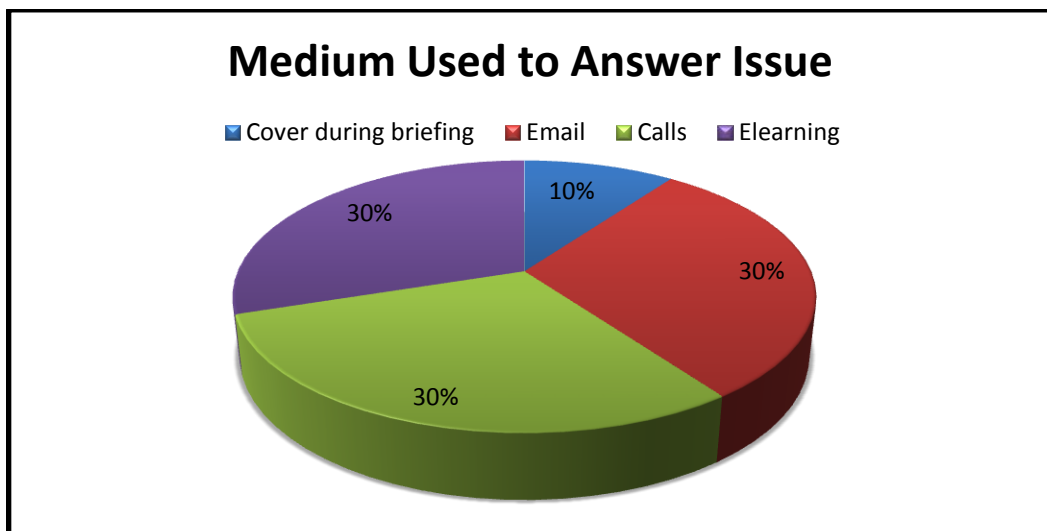
Response from the staff and coordinator stated that interns lack of understanding on who are their UTP's SV and the date of visits. This majorly comes to concern of interns as the need to prepare for the session and to inform their company SV. The second issue is regarding forms and progress report which cover on the formats and requirements. For internship project, the concern is on suitable topic and the deliverable of the project. As such it leads to common things being asked by multiple interns that worried on the situation. This results in redundant effort to answer the same issues.

Question 5: How frequent do CSIMAL received such inquiries?



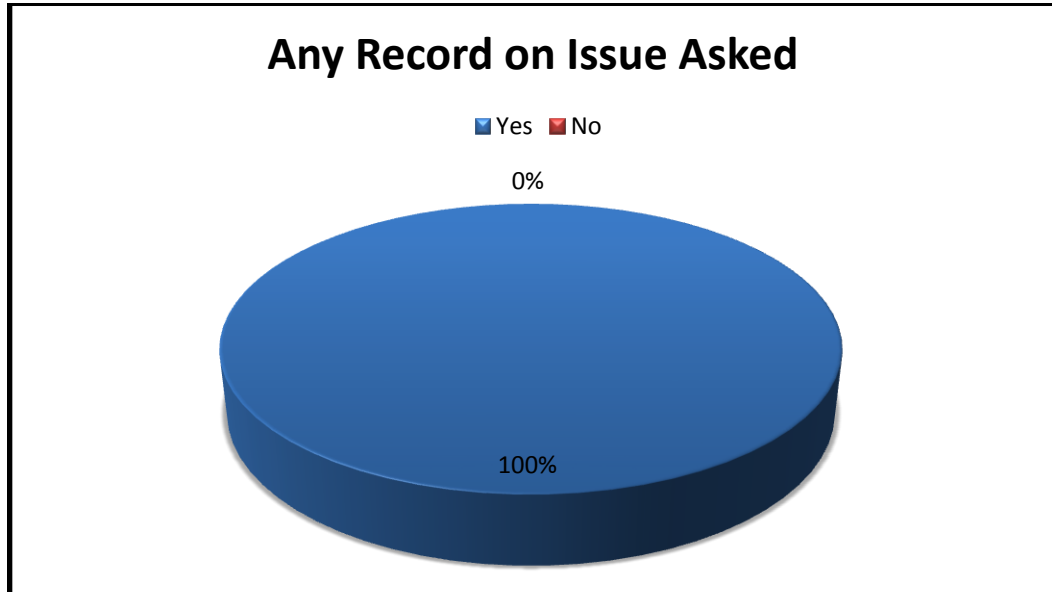
The comment from staff stated that reoccurrence of same issue being asked do multiply when approaching dateline for certain requirements. For example, details in the forms such as whose signature are required. In additional, the result show that the main medium used by the interns is direct calls as the interns is expecting immediate response. As a result, this lead to congestion of CSIMAL phone line. Hence, to avoid this, interns is advice to prepare everything earlier by keep them aware of the dateline.

Question 6: Do SIU provide any means of medium to answer these entire questions?



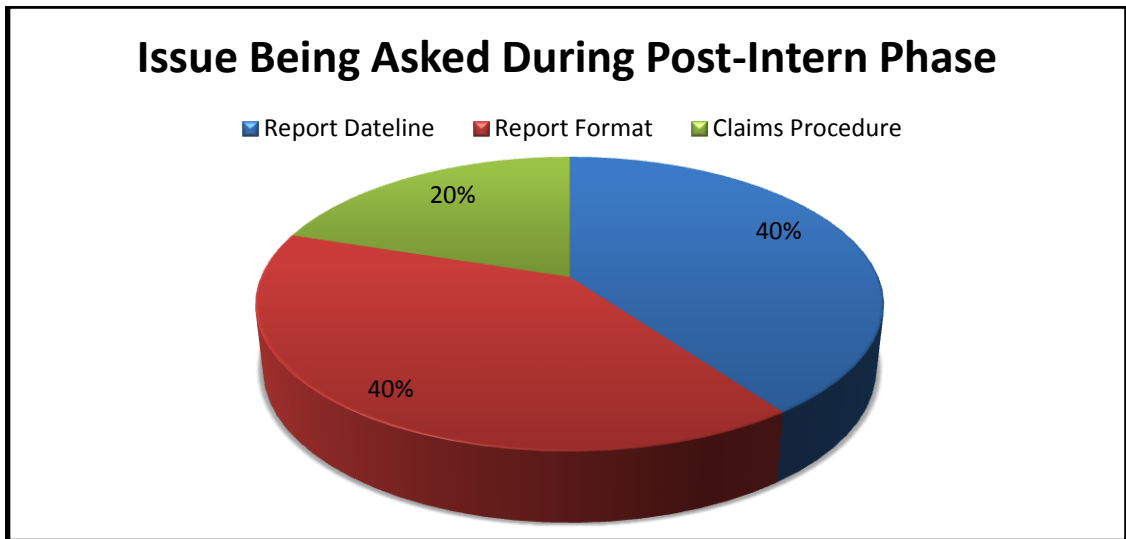
The CSIMAL staff response stated that, most of the issue faced by interns has been resolve during the Internship Briefing. This however not really clear to the interns with the facts that they can't see the situation until they undergone one. In term of information dissemination, E-learning is the favorable medium for CSIMAL staff, while for UTP Coordinator and SV, direct email is much faster. This might due to the fact that lecturer prefer personal direct discussion with the interns while for staff, they are focusing on dissemination of information in large scale. What's left is for the interns to be aware of the entire medium used by the staff to ensure they obtain the latest update on the process.

Question 7: Do CSIMAL have any collections of the most asked question for record?



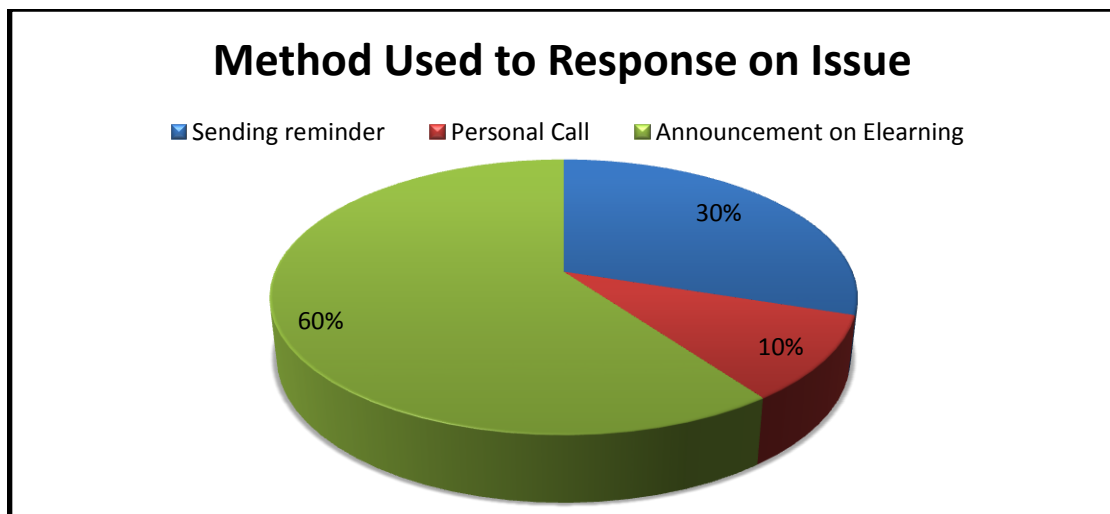
According to the CSIMAL staff, there is neither official nor personal kind of records of the issues asked to them. From the response this might due to lack of opportunity to actually jot things down and focus entirely in solving the issue. However, only the Internship Coordinator keep all the email as reference, where sometimes, it is to be used as template to answer to same issue asked to them. This is a good initiative but proper records should serve more effectively and efficiently for everyone.

Question 8: What is the most common issue CSIMAL received from the intern? ****This point onward is focusing on post-internship phase.**



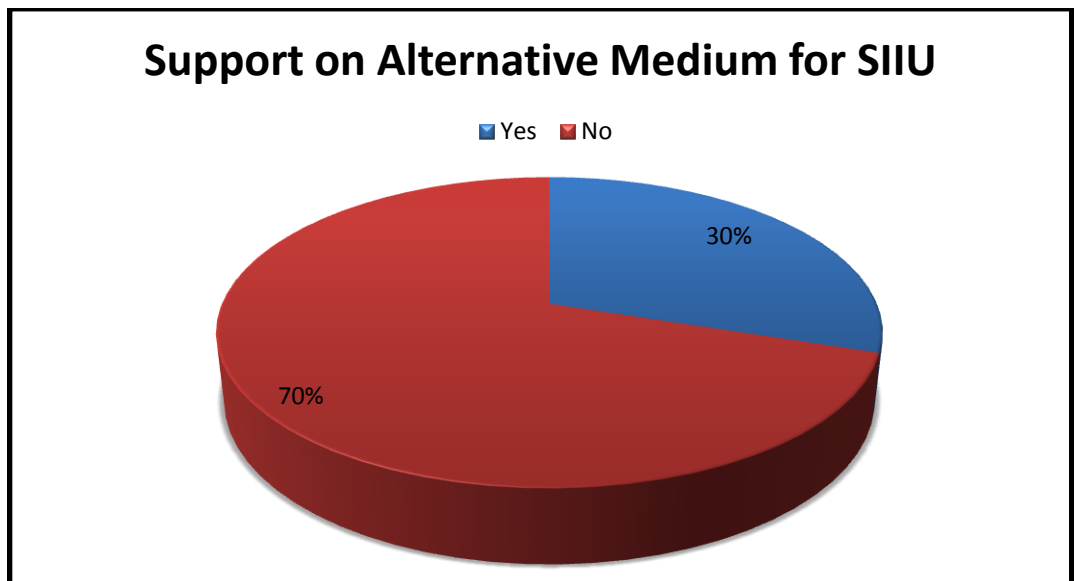
During this period of internship phase, most of the interns are focusing on their reports, which comprise of technical and final report. For both reports, the common issue raise is regarding the format and dateline. As sometimes, the dateline of the final report is affected by the changes happen during the previous phase. This result to a domino effect which lead to such situation. For certain company that sent their interns outside, UTP do prepare claims program under certain rules and condition. Some of the interns do use the facilities prior to the approval from their company's SV.

Question 9: How do SIIU response to this question?



Most of requirement during this phase is made through E-learning as for SIIU it is easier to make the announcement accessible to interns. As a result, the interns are expected to be aware of any announcement at E-learning except for personal inquiries, which will be reply through personal email. Hence, interns are recommended to always check for any update at both E-learning and their personal email.

Question 10: Will CSIMAL prefer an alternative medium to transfer all the information or the existence system should be enough?



Overall, CSIMAL staff doesn't favor for any alternative medium for information deliver to the intern as according to them, the current one is sufficient. Unfortunately, the current medium which is E-learning in another way, do skip from interns attention and also exposed to problem such as server down. For Internship Coordinator, they do prefer for alternative medium which compile all the information. This come to their sense if the medium is dynamic and interactive to attract interns to utilized it well as to avoid redundancy issue. As conclusion, the feedback form the survey done showed that the reoccurrence of issue happened does affect both interns and also UTP's staff. In a way, the idea of having another medium that gathers all the issue and prompt best solution should come in handy. Less inefficiency can be done and yet, high productivity with less time consuming.

4.4 Result of Taxonomy Development Process

In the development of the FAQ, the developer has implemented the taxonomy concept to allow better management of the questions and answers. Using the step by step method by Whittaker, M. and Breininger, K (2008) which approved by Harris, G. (2008) the result of the taxonomy development has highlighted:

4.4.1 Determine Requirement

The first stages where details of the taxonomy are collected from the target user of the system which is UTP's supervisor, UTP's intern, and of course the CSIMAL staff. As stated earlier, set of survey on the details of the component has been prepared. The survey is made specifically for every target user, highlighting which part of the internship phases that they involved and what the process they involved in the phases. The main objective of the hand out is to collect what the field of question or issue to the user, which cover the domain of:

- CSIMAL staff: - The question or issue faced regarding the pre internship, during internship, and post internship.
- UTP's supervisor: - The question and issue that they receive during the internship period and the post internship period.
- UTP's interns: - The question or issue they faced at the pre internship phase, during the internship period, and the post internship.

The requirements developed through the research paper manage to reflect that there is different user that involve in different phase of the internship process than other. This is happening as a result of some user, refer to UTP's supervisor doesn't involve on the pre internship because the role of UTP's supervisor is to monitor during the exact seven month of the internship. This excludes the SV from the phase before the intern going to the internship period. Hence, pointing out that certain situation lead to certain requirement which can be varies or constant throughout the process involved.

4.4.2 Develop Draft of Taxonomy

Once the requirement has been detailed out, the next step in the development is to sort the detailed topic within the categories earlier. Based on the research paper, the developer manages to further refine the issue into smaller focused topic for every internship phase. The topic that manages to be list out based on the early feedback from the target users can be seen in the table below:

Internship Phase	Topic of domain
Pre Internship	<ul style="list-style-type: none">• Requirement and documentation• Resume• Placement Offer
During Internship	<ul style="list-style-type: none">• Project• Logbook and report• Visits• Working procedure• Others
Post Internship	<ul style="list-style-type: none">• Report format• Report Submission

The topic is listed out based on the key component of the question and then grouped together under the same topic issued. In another way, the questions are been classify into smaller topic that allow user to easily identify what the question they want. As a result, there will be several other topics for every phase of internship. The topic can and will be update from time to time based on the questions or issues raised by the user of the FAQ management system in the future. The administration of the FAQ content will enable adding, deleting, as well as updating to be done according to CSIMAL policies. This ability is included in the FAQMaS as part of the feature that allow maintenance work to be done at any time.

4.4.3 Refine Taxonomy

For this part of development, the draft of the taxonomy is further reviewed by developer based on the phase it is on. The questions listed under specific topic are then sort and filter again to ensure the arrangement is correct and no redundancy or similar questions included. The arrangement of the question is important as to avoid confusion for user when they refer to internship flow, especially if the question related to the reports and any dateline for interns to be aware of.

Once the arrangement and the questions are screened back and forth, the development stage comes to the part of preparing the correct answer for the FAQ. This part required thorough understanding on every part of the internship flow so that all the information is correct and aligns with CSIMAL policies. The developer worked hand by hand with CSIMAL staff while providing the response to the questions and issues rose in the research paper. Even though the content is not many yet, the FAQ management system will be updated from time to time. This is crucial as to ensure any changes in the CSIMAL policies which impact the internship flow or requirement will be updated in the FAQ management system.

4.4.4 Apply Taxonomy

The development of the taxonomy is now reaching the phase of implementing it in the interface that will be used by the user. The developer is using the web application structure for presenting the FAQ management system. As explained by McBuzz (2012), Wordpress is a web based software program that supports the content management system (CMS) which allow the FAQ to work very well within the software. The implementation of the taxonomy in the FAQ using the Wordpress allow the managing part becomes effective and for users, easily to access. The FAQ Management System (FAQMaS) is presented using Wordpress platform known as UTP Internship FAQ or UTPiFAQ. The name is chose to allow a more commercialized brand name that easily to remember by users.

In UTPiFAQ, the FAQ will be focusing on three main phase of the internship. For every phase, users will find another refine topic which related to the main phase that covers certain details on the process or documentation inquiries for that phase. For every topic, the questions are arranged according to the correct sequence as certain of the step related to each other. Hence, by doing that the information can be deliver in the most precise and correct ways.

4.4.5 Manage and Maintain Taxonomy

The deployment of the taxonomy of FAQMaS inside the UTPiFAQ allows high flexibility on the content itself. Purposely develop as to have administration functionality, in the UTPiFAQ will enable the admin to add, edit, and delete the FAQ at any time. Other than that, there is several other functionality that supports the FAQ concept at the UTPiFAQ such as, announcement page for CSIMAL to post any update to the users. On top of that, for every FAQ question and inquiries there will be a rating system for user to rate how the information help them for their issues. From there, the admin can do analysis on which phase out of which topic will have most response that indicate the seriousness of the issues. It can be used by CSIMAL for future reference in improving their information dissemination to their stakeholder. Other than that, users that failed to find their issues can personally drop and email for the admin, which basically, CSIMAL staff to obtained their answer. Then, the question will be added into the UTPiFAQ to ensure others can find the answer in the future.

4.5 The Prototype: UTP Internship Frequently Asked Question (UTPiFAQ)

The web application has been develop using Wordpress platform including all necessary plug in and applied the taxonomy for the FAQ regarding internship. The main components of the UTPiFAQ are the home page, about, updates, the taxonomy according to the internship phases, and lastly the contact. Referring to the Figure 8 below is the screen shot of the home page of the UTPiFAQ design and certain elements on it. The web application can be access through www.utpifaq.com



Figure 8: UTP Internship Frequently Asked Question (UTPiFAQ)

Next, proceed with the overview of the other page for UTPiFAQ, starting with the About page in the Figure 9 below. Here, a brief explanation regarding what UTPiFAQ is all about. As explained by Hyde, J. (2010) regarding the About page which is the medium for user to discover who lives behind the web application that they surf. Another term, this page help is putting anonymous organization or developer into perspective of clear definition.

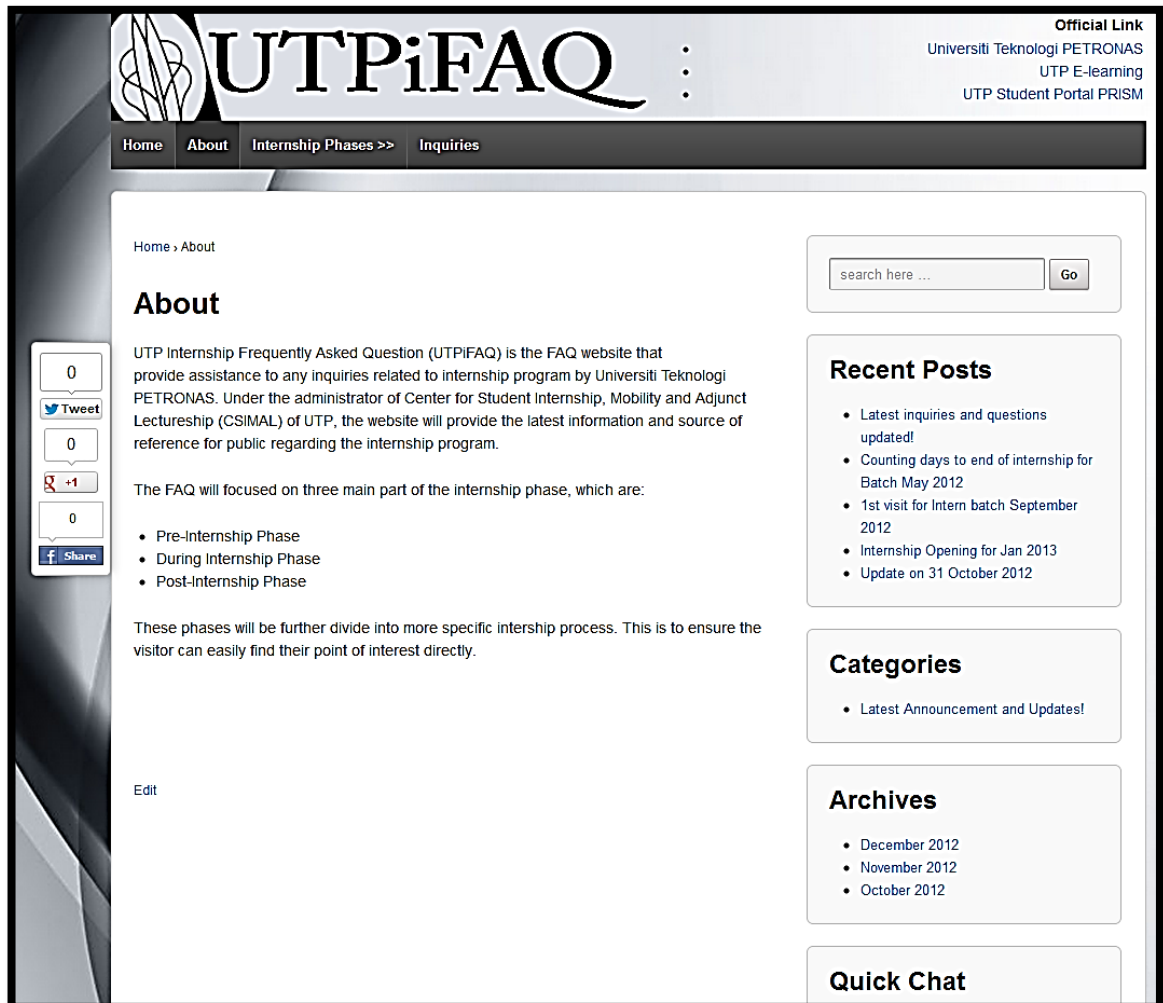


Figure 9: UTPiFAQ's About page

Proceed to the next page of UTPiFAQ is the “Latest Questions and Updates!” page as showed in the Figure 10. User can easily access to the page by directly clicking on the button at the home page or while surfing on other page, click on the categories on the right column to visit the page. Another alternative is to click on the Recent Post for specific update by CSIMAL. The page is prepared for CSIMAL staff to include any update regarding any changes or important announcement regarding the FAQ or the internship process. User can easily obtain the information by visiting the page which will update periodically.

Link to other pages related to UTP's process

The screenshot shows the UTPiFAQ website interface. At the top, there is a header with the logo and navigation menu. The main content area features two blog posts. The first post is titled "Latest inquiries and questions updated!" and includes a search bar and a "Go" button. The second post is titled "Counting days to end of internship for Batch May 2012". The right sidebar contains a search bar, "Recent Posts", "Categories", and "Archives" sections.

Figure 10: UTPiFAQ's Updates page

Arriving at the core page for UTPiFAQ is the taxonomy of FAQ page which can be access through two points referring to Figure 11 and Figure 12. Develop based on the three main phases of internship, the FAQ is further classify into several other topic which focusing on the aspect relate to the phases. Topic such as related forms for documentation, certain procedure during internship, as well as link for specific forms also included within this part. Additional features include for every FAQ is the rating application where it help admin to evaluate which FAQ give better impact to the user. From here, CSIMAL will be able to identify important component of internship that require more attention among the others.

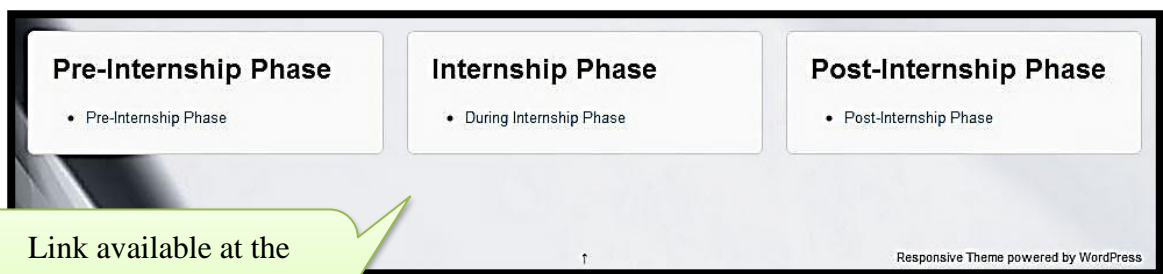


Figure 11: UTPiFAQ's FAQ Link at Home page

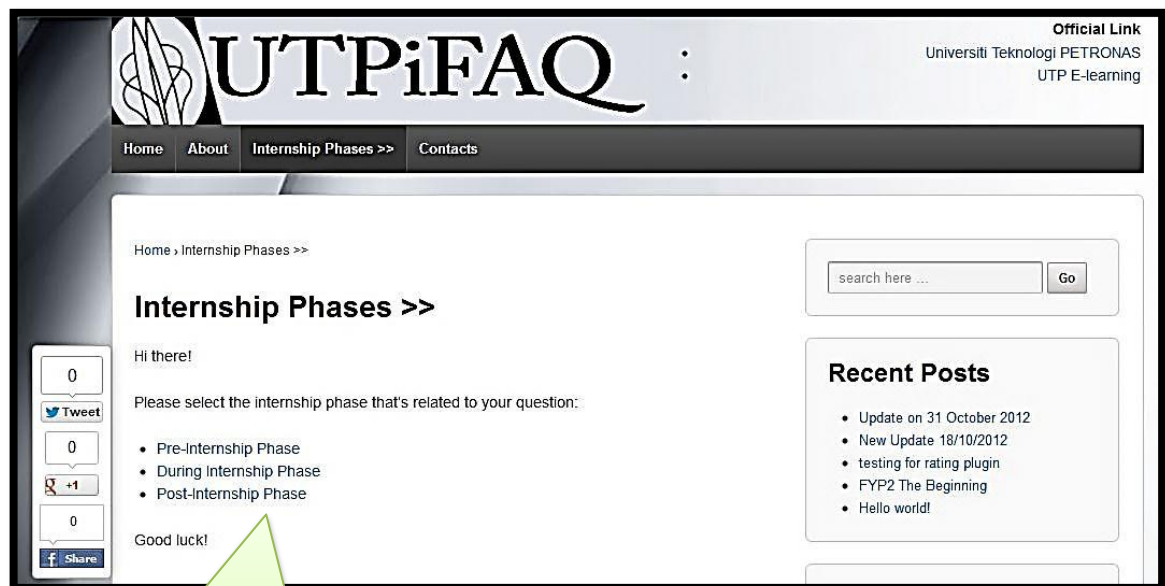


Figure 12: UTPiFAQ's FAQ page

The UTPiFAQ serve the most common issue related to internship based on experience faced by CSIMAL staff and the lecturer. User can refer to the FAQ to obtain the solution of the question and for question that are not listed there, user can obtain feedback through the Inquiries page as shown in the Figure 13. At the Inquiries page, user will directly connect to the admin of the web application through email which is important for user to get information if they can't find it in the FAQ. From there, admin will update the FAQ regarding the issue asked to ensure the others will get the answer from the FAQ.

Official Link
Universiti Teknologi PETRONAS
UTP E-learning
UTP Student Portal PRISM

Home About Internship Phases >> Inquiries

Home > Inquiries

Inquiries

If you can't find your issue or having any inquiry regarding any part of the process, do send us an email. Please complete all the information required, provide your question as details as you can and we will entertain your mail as soon as possible.

*(denotes required field)

Your Name (*required)

Your Email (*required)

Subject (*required)

Your Message (*required)

These security checks help us to prevent unauthorized access to our mail system. Please insert the following character to proceed

z z 8 9

In case of you need to attach related attachment please do so. The size of the file should not exceed 25MB

Recent Posts

- Latest inquiries and questions updated!
- Counting days to end of internship for Batch May 2012
- 1st visit for Intern batch September 2012
- Internship Opening for Jan 2013
- Update on 31 October 2012

Categories

- Latest Announcement and Updates!

Archives

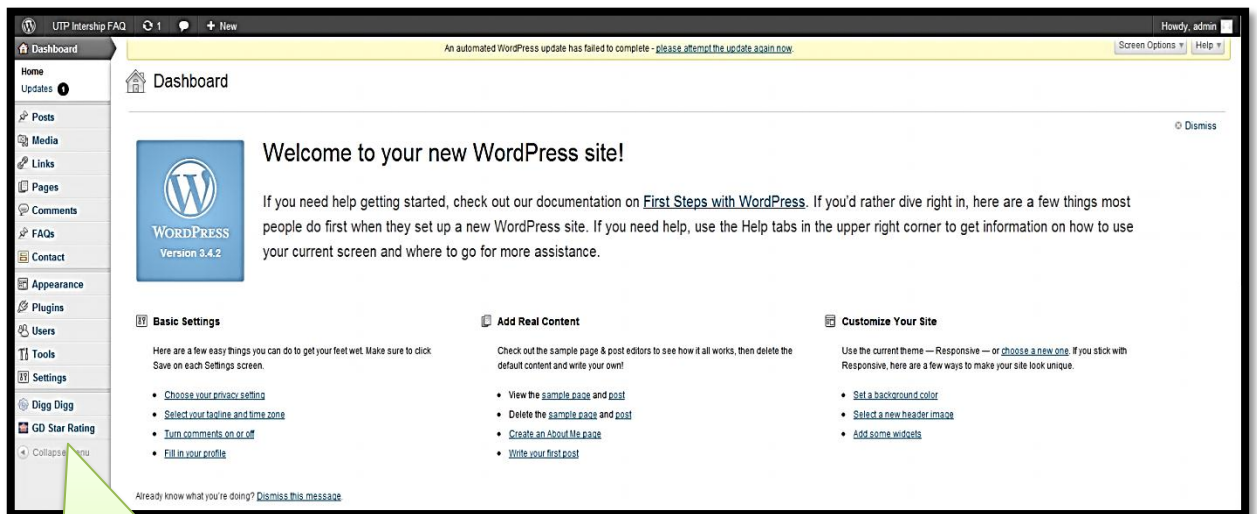
- December 2012
- November 2012
- October 2012

Quick Chat

CAPTCHA application for security purposes, avoiding spam into admin mail system

Figure 13: UTPiFAQ's Inquiries page

Previously we have looked at the main component of the web application from the perspective of user. In term of administrator perspective, the web application can be further maintain especially when come to its design and function within the application. The administration access will allow admin to alter all the details related to the web application, starting from the interface, to the post, as well as the other functionality. Recognize by the name of Dashboard as in the Figure 14, the admin now have the total control on how the web application should behave.



Tab for functionalities available for the web application

Figure 14: UTPiFAQ's Dashboard Panel

In details, the functionality of the web application can be access from the tab list at the left column of the page. The panel will allow the admin to access the other functionality such as:

- The Post – Allow creation of the new entries for “Latest News and Updates”.
- The Media – The local directory for attachment (picture, video, etc.)
- The Page – Enable the admin to create new page available at the tab of Home.
- The FAQs – The panel for FAQ functionality.
- The Contact – Directory to the design of Contact page and its components.
- The Plugins – The center for searching and managing more functions.

Located at the Dashboard of the UTPiFAQ is the access to the maintenance point of the question and answer for the taxonomy part. The FAQs panel as in the Figure 15, has several other sub-panels which solely on the maintenance over list of questions and answers. If the admin directly accessing the FAQs tab, the application will show all the questions currently available inside the FAQs applications. This here is the local database that keeps all the question and answer along with its details. Details such as the title of the question, the category where the question is attached to, and the date it is published. Admin go personally edit the question by clicking directly to the question they want.

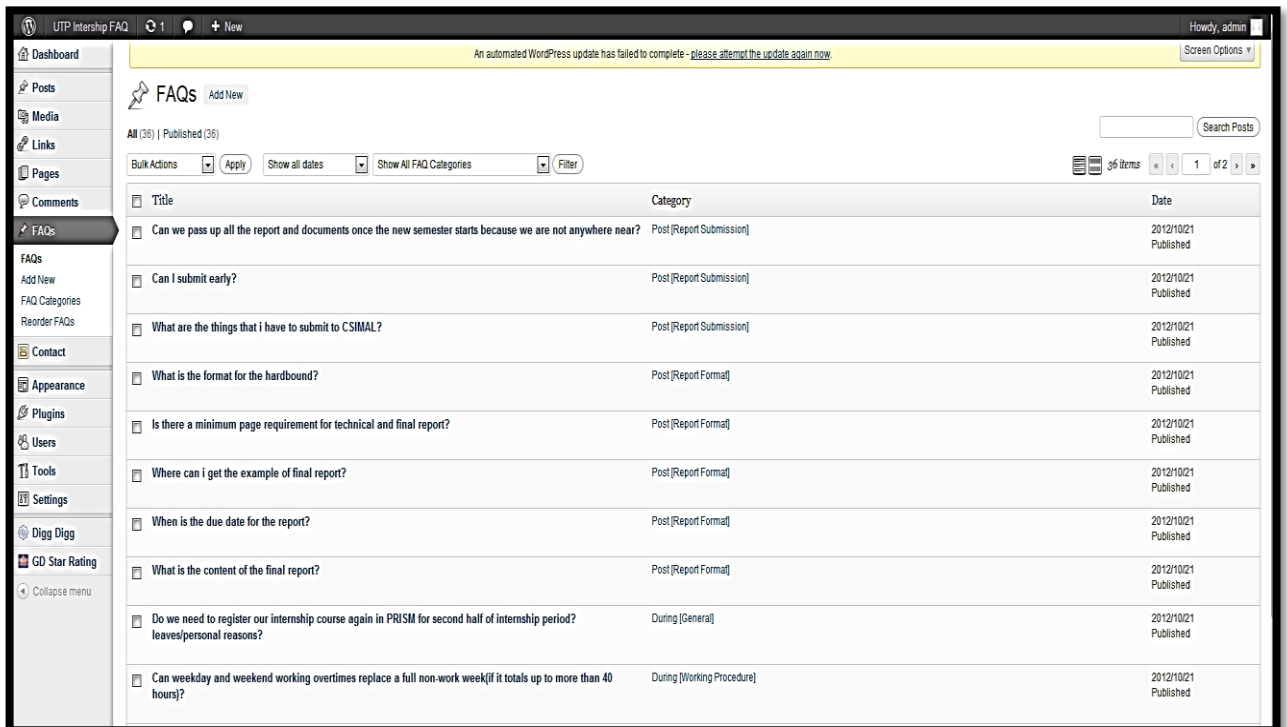


Figure 15: UTPiFAQ's FAQs Panel

By referring to the sub-panel of the FAQs on the left column, the other functionalities available are:

- Add FAQ – Figure 16 shows the screenshot of the Add FAQ panel. At this panel, the admin can add the new question and provide the answer. In the same time, admin is required to configure which category in the red box that the answer is attaché to. This will enable the taxonomy to be applied and the question can be further specifying into its specific topic.

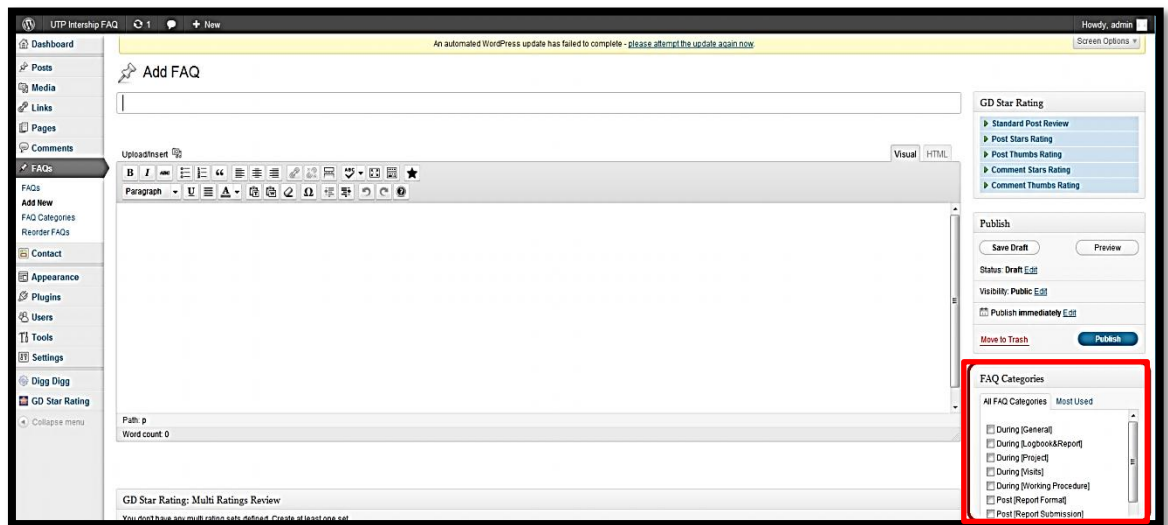


Figure 16: UTPiFAQ's New FAQ Panel

- FAQ Categories – The panel in Figure 17 is where the place for new category to be created. The category is Taxonomy component where it enables the content to be properly link under specific topic. In the same time, the functionality will enable the FAQs to control where the location of the category to be display.

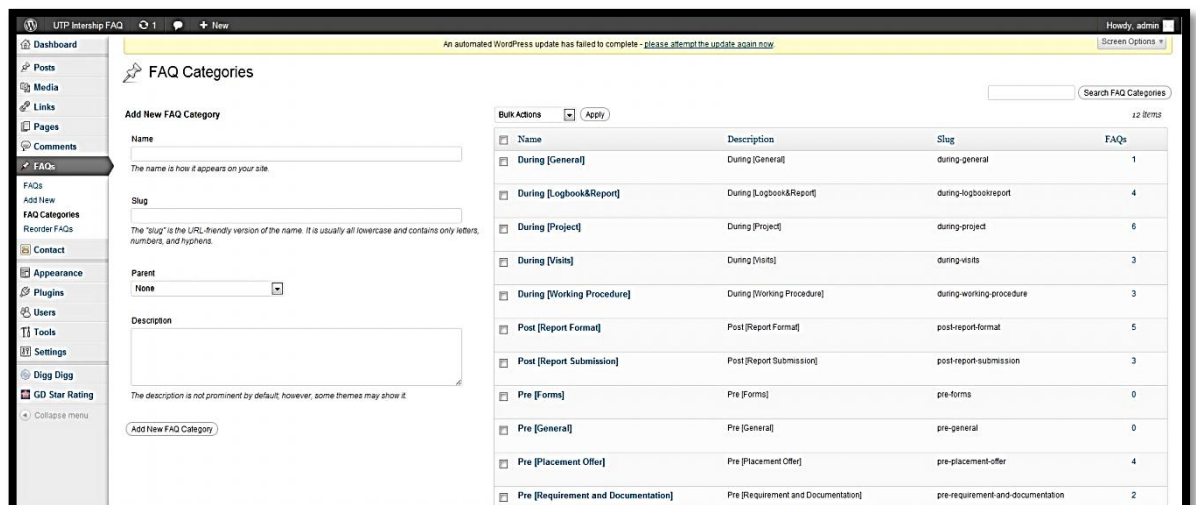


Figure 17: UTPiFAQ's FAQ Category

- Reorder FAQs – The Figure 18 below shows the panels where the admin can reorder their FAQ list following the arrangement their wanted. This capability allows more maintenance to be done as sometime the arrangement changes once multiple FAQ are created. Hence, this will allow the admin to properly arrange the FAQ according to the proper process or arrangement.

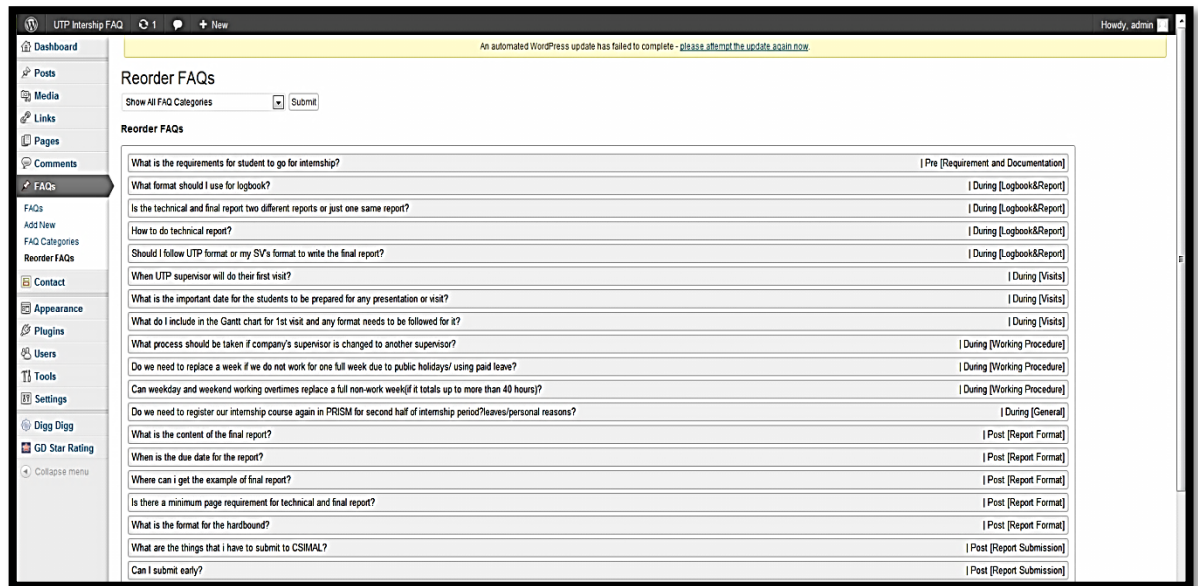


Figure 18: UTPiFAQ's FAQ Order

4.6 User Testing and Feedback

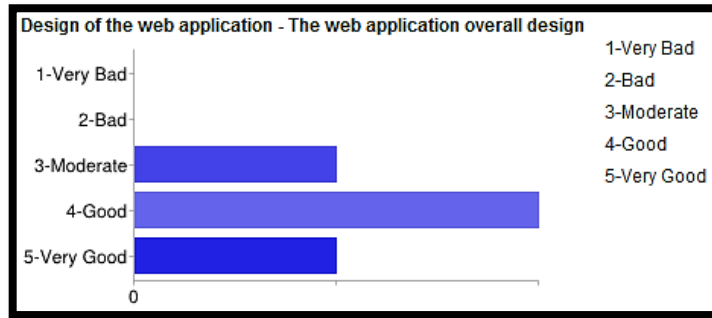
As part of the methodology for the project, the completion of prototype will be mark with a user acceptance testing. This process will actually mean to collect feedback as well as comment regarding the application. From there, any changes whether it relates to the structure or the content will be change right away. The process will keep on continue until user satisfy and then, developer will proceed with finalizing the application.

The user testing and feedback has been made on the two main subject of the project, the asker end which is the student or intern and the response end, the CSIMAL staff or lecturer. In the testing process, the main highlight is focusing on the physical aspect of the web application. The physical aspect cover:

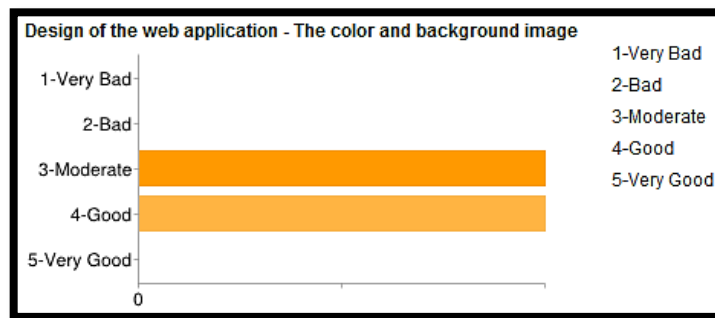
- The design – The user is being asked to evaluate the suitability of the background, the arrangement of the button and tab, and the image that attaché to the application.
- The navigation – The feedback regarding the navigation on the application. Consideration on the click rate by user, easiness to track user movement through the web application, and the scrolling effort require to access the content.
- The functionality – Testing on the functionality of the application focusing on the main FAQ function and also the other support function. The support function covers the CAPTCHA security, the social network button, and the quick chat function for user.

The user acceptance testing is made with the both target user in a separate session. The first session is made with the intern where they follow the instruction given and test the web application. The second session involves the CSIMAL staff where a simple demonstration is prepared follow by hands on for the staff. In every session a feedback form is prepared which required the user to evaluate their experience is handling the web application. The rating and comment for every part is taken into consideration and properly analyze to ensure the relevancy which can improve the web application.

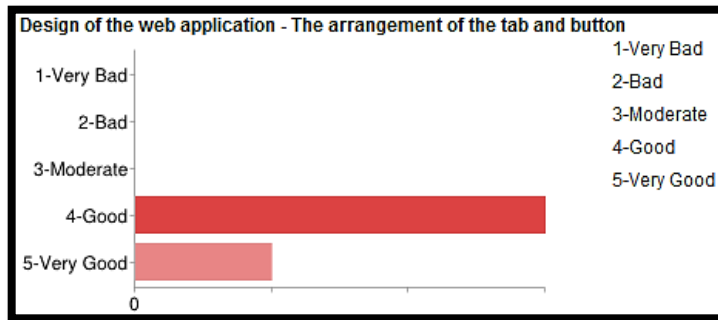
The testing modules start with the first aspect of the UTPiFAQ which is the design of the interface. Users go for the comment and evaluation on the design aspects which cover structure of the web application, the color and image applied, and also the arrangement of button and pages of the UTPiFAQ:



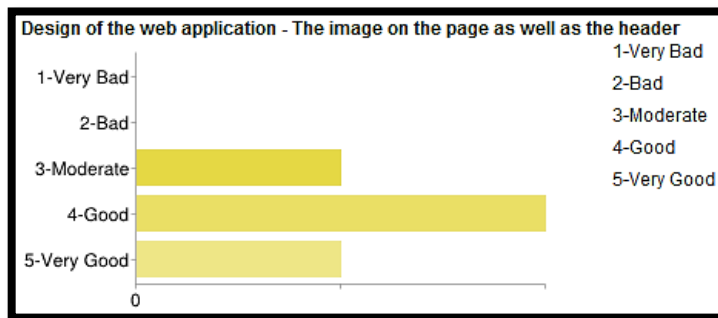
The first aspect that is tested is the overall design of the UTPiFAQ web application. The evaluation of the user is made on the basis whether the interface design suit the corporate image the developer try to convey. The result show that most of the user satisfy with the image and agreed that it manage to deliver the corporate value of the content.



The second component under the overall design of the UTPiFAQ is focusing on the color and background image of the interface. The color of the tab and the other attachment also being rated and the result from the user show positive comment. Overall, the user find the design suitable for the visibility of the content while the other suggest that the interface could use more variant color to give more impact to the viewer.



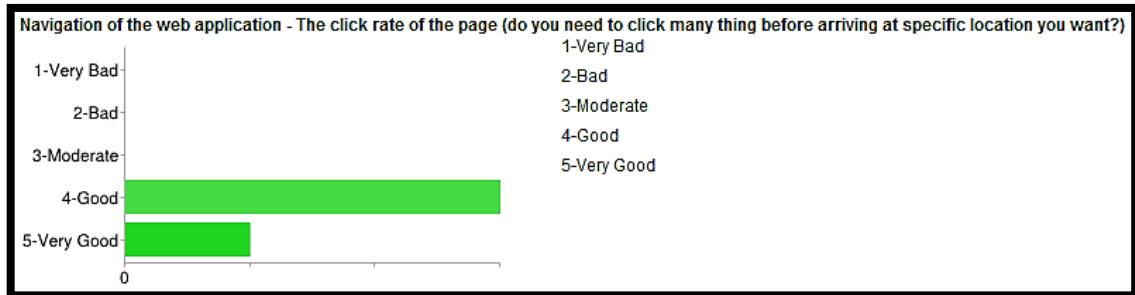
The next component of the design aspect of the UTPiFAQ that is evaluated is the arrangement of the tab and button available at the interface. The user is asked to rate and comment on the arrangement and design of the tab and button from their perspective. The result from the graph shows that all the user give good rating for that aspect which also indicate high satisfaction level.



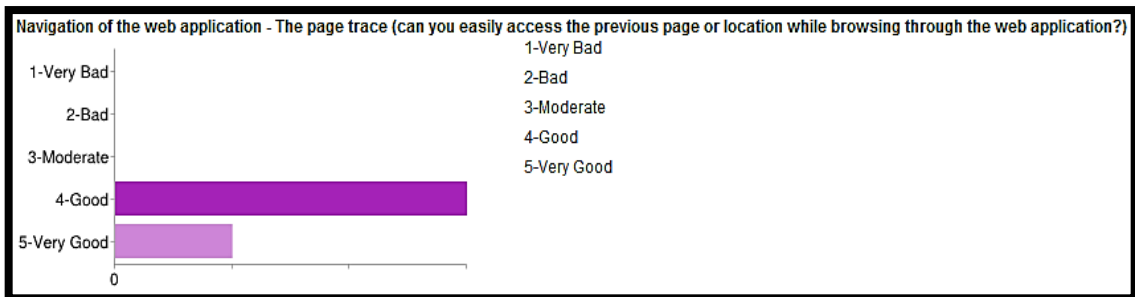
Arriving at the last component of the aspect of the interface design is the image located at the UTPiFAQ including the header design. The user is asked on their opinion on the design available whether it is suit the deliverable of the content or not. The result point out tha the current design should serve the propuse. However, some response that the admin should update the design from time to time to make sure there is fresh element at the interface in the years to come.

The feedback on the navigation aspect on the UTPiFAQ:

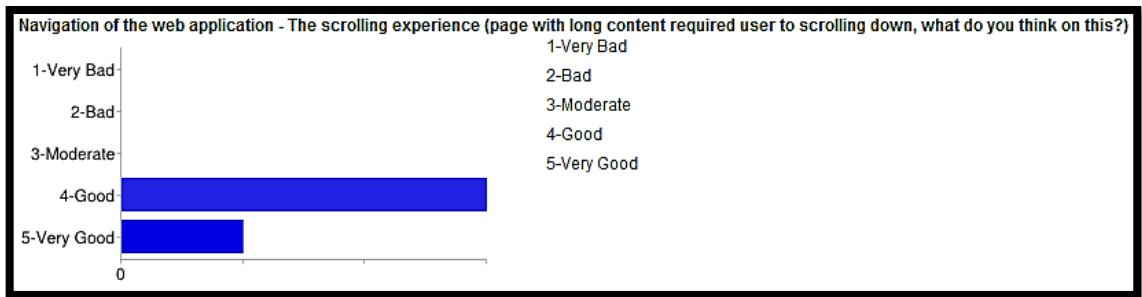
The next module for the testing activities is revolves around the navigation aspect of the UTPiFAQ. The user is allow to do hands on activities to the UTPiFAQ and need to give response on several aspects such as:



The aspect of navigation for the UTPiFAQ in term of the click rate done by user to arrive at location they wanted. This point out how many mouse click that user need to do to arrive at any point while browsing the UTPiFAQ. The response highlight that the click rate is efficient and direct for user to arrive to their point of interest. This is important as to show that the content deliverable nicely and not complicated for user to identify their point of interest.



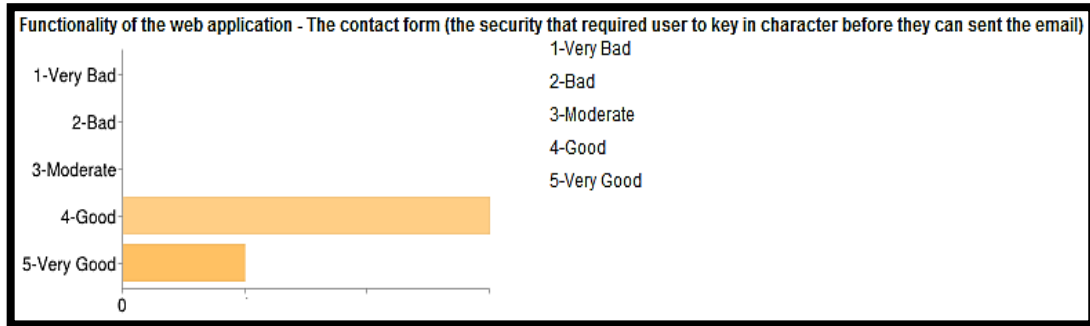
The next module under the navigation of the UTPiFAQ is the testing on the page trace from the user browser activities. When user browse the pages, the developer has setup a tracking functionality to trace user step from the home page. In a way it will allow user to keep back to their previous location in case of they can't the content they wanted. The user rating that the function is working very well and making their browsing experience easier as they can easily know where they are currently from the home page earlier.



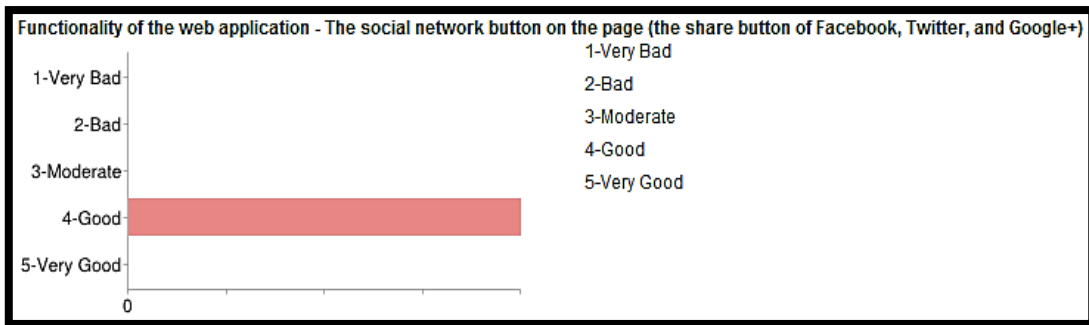
Under the module of navigation of UTPiFAQ, another aspect that include in the testing is the scrolling experience of the UTPiFAQ content. Here, users do the testing on how efficient the page can be from the aspect of scrolling on the pages. The feedback from the users returned high satisfaction on the content management where they can easily understand all the content despite need to scroll down the page, especially at the FAQ page. Since the question can be a lot for certain phases, user need to scroll a lot of time to find their question.

The user response on the functionality aspect available at the web application:

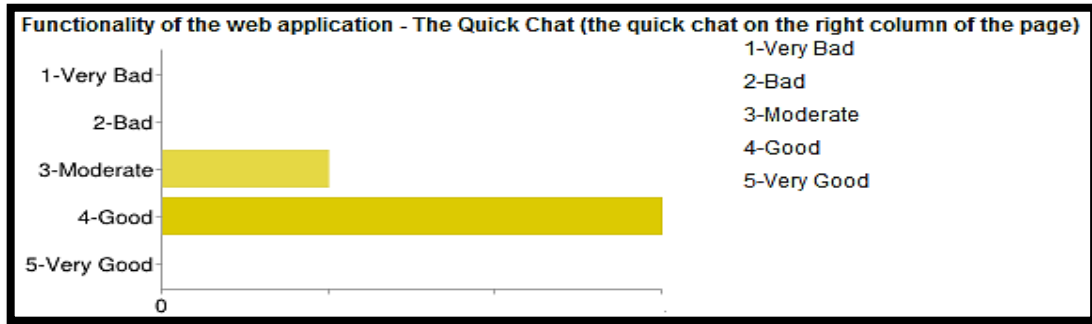
The last module of testing will focus on the functionality that include within the UTPiFAQ that support the FAQ content. User is will test on the effectiveness and any other aspect of the functions included to collect their feedback.



The first function that user tested is the contact form at the Inquiries page. In the same page, the security aspect known as the CAPTCHA is included and the feedback and comment from the user is collected. The result show that the page is very helpful for the user and the application if the security is well support by the user, especially comments from the CSIMAL staff that will be the admin in the future.



Proceed with the testing module for the support functionality includes in UTPiFAQ is the social network buttons. As include in the plan to help in promoting the UTPiFAQ, the developer include a social network button to allow user to share the page through their social network account. In a way, user can help to disseminate the web application to their other member. Apparently, response form user is positive as for them everyone do have account for the social network and for them if the content is very helpful, they will be glad to share it to their friends.



The last component of the functionality testing will focus on the Quick chat function available at the pages. The user is required to test the chat and their feedback on the function is collected. High number of user do support with the chat function as for them it will enable them to share a thought there. This also includes that for the admin, they can also receive any new question as the input for FAQ content from the chat. However, some users raise concerns that the chat will cause a messy view upon the people chatting unrelated topics. So, the developer stated that the admin will have full responsibilities in monitoring the content on top of the chat itself, which also has its own filtering database to catch out any improper words and language.

As a conclusion of the user testing and feedback, more than 95% of satisfaction has been shown at the current level of the UTPiFAQ. Another 5% of the response is highlighting details that can be improved and should be considered to ensure that the web is working as expected. These details such as background color and image and significant value of the Chat box functionality will be further clarified for the betterment of the web application.

CONCLUSION

For students that undergo their internship, the entire processes involve standard requirement and also precise documentation process. In their way to adapt to the requirement, student will refer to CSIMAL and UTP's SV and a lot of question is expected. Probably, the same question being asked by more than one student will be high. This will later on lead to redundant effort in answering the question that effect productivity of the staff. As result, the development of Industrial Internship Frequently Asked Question Management System (FAQMaS) is expected to reduce the redundancy happen in effort to answer repeating questions by intern to UTP staff (CSIMAL and lecturer). With the potential of high usability by both staff and intern, the FAQMaS will ensure the efficiency of knowledge flow and its effectiveness with the application of taxonomy on the content of the system. In the same time, all users can have centralized point of reference for better information dissemination. As for the future prospect, the first plan by the developer will be in promoting the UTPiFAQ to the intern and staff upon its completion. The UTPiFAQ demonstration will be include in the briefing session by CSIMAL on internship procedure as well as to be included in the guideline as part of official medium for the department. In the same time, future prospect will focus on the application of UTPiFAQ not just on the FAQ, but instead can be used as to commercialize the internship program of UTP to a different level. Serving the info related to the program through an interactive and responsive application, any high potential companies which interested to find their future employee can simply join UTP internship program. All the information can be easily access through this web application. By that, the FAQ will not just focusing on interns issues, but instead cover more to the whole internship program with more extensive taxonomy being applied.

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The Application of Frequently Ask Management System (FAQMaS) for Internship Personnel

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Abstract - The industrial internship program is a course set by the administration of university as part of the curricular structure to expose the student with the real situation and requirement of the industry. Along the course period, there are processes and procedure that intern need to follow. The problem starts when intern facing same issue and everyone is asking the same thing. As the main reference point, the Centre for Student Internship, Mobility and Adjunct Lectureship (CSIMAL) is being asked with the same question by multiple interns. Unfortunately, this has created a redundancy in the effort to solve the same issue all over again. Therefore, to avoid redundancy, Industrial Internship Frequently Asked Question Management System (FAQMaS) is developed. The FAQMaS is built on the basis of providing a platform or medium for common questions and answer related to the internship process. By collecting the questions and answers, the web application will assist the CSIMAL staff and UTP lecturer in providing direct and quick answer without the need to personally contact the staff. The development of FAQMaS involves survey and interview session with the related user, both intern and staff. With the input and data from these users will then convert into the building of prototype of the application. In additional, the FAQMaS will adopt the taxonomy concept in managing questions regarding internship and provide answers following CSIMAL standard. Accessible via internet, the web application will serve intern and other personnel who require information without creating redundant issue on the CSIMAL staff and UTP's lecturer. It is believed to serve the user much faster and reliable in the search for information instead of fully depending on staffs which tight to other responsibilities.

Keyword – website; web application; question and answer; frequently asked question; FAQ

I. INTRODUCTION

The Frequently Asked Question is a section in most website which highlighted issues that most commonly faced by the user on the topic or related content of a website. The contents are collection of questions and issues along with the answer to assist the user regarding the topic. In a simplest way, the objective is to customer service personnel to assist user for basic issue faced by them as quick as they can to avoid waiting time. As recommended by Stephanie [1], the function of FAQ is to simplify the guessing part and offer an answer to the visitor that turns things easier. In addition, the FAQ is also being used as reference for user to obtain additional information regarding the content of the website.

In a way, people do prefer to have FAQ as compulsory part of their website as because:

a) Information convey

The used of FAQ to highlight certain important used or fact that sometimes not cover in the website itself.

b) Keyword link to the website

Some website does include certain words or phrase where it can bring the visitor directly to the website through keyword from search engine.

c) Quick understanding out of neat flow

Visitor does prefer FAQ as their reference through neat flow which lead to better understanding as some webmaster apply the outline based arrangement for that section.

d) Precise section for specific issue

For visitor with issue, accessing FAQ will lead them directly as the section is well sorting base on topic or subtopic just like the main content.

APPENDIX

Adaptation of FAQ concept in organization as the medium in managing information as well as knowledge is consider as one of high potential field. The system is expected to deliver most common information related to specific domain on the company is speed the flow for new people. Not just new comers, but for every people that experience issue can simply use the application and search for the answer.

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In a way, people do prefer to have FAQ as compulsory part of their website as because:

- e) **Information conveys** - The used of FAQ to highlight certain important used or fact that sometimes not cover in the website itself.
- f) **Keyword link to the website** - Some website does include certain words or phrase where it can bring the visitor directly to the website through keyword from search engine.
- g) **Quick understanding out of neat flow** - Visitor does prefer FAQ as their reference through neat flow which lead to better understanding as some webmaster apply the outline based arrangement for that section.
- h) **Precise section for specific issue** - For visitor with issue, accessing FAQ will lead them directly as the section is well sorting base on topic or subtopic just like the main content.

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Looking at the functionality that serve people with the daily question which might be one of the familiar questions, The Centre for Student Internship, Mobility and

Adjunct Lectureship (CSIMAL) of Universiti Teknologi PETRONAS is facing the situation where same question has been asked by so many times to CSIMAL staff. Even after one of them answered intern issue, it seems that other intern who experiences the same situation doesn't get the information. This then lead to the same thing is being asked again which lead to redundancy to the CSIMAL staff. The staffs need to answer it which affects their productivity on others task. By that, the FAQ concept is considered as the best solution to avoid redundant effort in solving repeating issue. Generally, the problems can be put as:

- a) **Redundancy from same issue being asked many times:** - The CSIMAL and the lecturer experience redundant effort in answering to the same issue multiple times which create inefficiency on their task.
- b) **The absence of centralized medium for repeated issue:** - On top of the redundant of questions asked, there is no intuitive as well as suitable medium to cater this issue. The absence of proper medium to gather all the question and answer contribute to the existence of this situation.

As looking at the situation, this project develops the Industrial Internship Frequently Asked Question (FAQ) Management System or FAQMaS as the solution. FAQMaS is a system to assist any related personal (intern or staff) to deal with frequently raised issue regarding internship. The idea is basically providing compilation of most asked questions by the intern to CSIMAL. Being included in the compilation is the answer, which is direct and straight forward as a quick reference for the user.

In other word, the objective of the project is to provide platform as solution for redundancy that occurs from the same question asked by several times. In fact, this lead to inefficiency faced by CSIMAL's staff and UTP's SV as a result of redundant effort while solving the repeated questions. In addition, the project will also develop a FAQ system that will be applied to the platform for the interns and UTP's staff (lecturer) as the content management system which enable the user to quickly identify where their question is and ease the process of finding the answer directly.

II. RELATED WORKS

On other occasion, the concept of FAQ is well known for its usefulness in serving the purpose of assisting user for applications. The very obvious one is the implementation of FAQ with the application of internet, which has made the service become more reliable as source of reference. Research by Hsu, C.H. [2] with the rapid development of internet, the Frequently Asked Questions (FAQ) System

APPENDIX

has become the main bridge between enterprise and customer. In a way, the system does assist the people that come into contact with specific issue of a domain while browsing the internet and can directly find the answer. The implementation of FAQ in website also happen due to initiative of admin to answer repeating common question regarding certain issue, the same as the finding by Finkelstein, A. and Sommerville, I. [3], where they discover that FAQ have grown out of Internet newsgroup where participant tired of seeing the same question repeated by newcomers by providing the list of canned answer to the most frequently asked question.

Furthermore, the FAQ also being implement majorly in providing information directly to its intended users. A direct implementation of FAQ concept in assisting business process can be very helpful in certain organization. Other than just used as source of information in website, there is effort in developing FAQ concept into more sophisticated system. Research done by Zhang, M., He, T., and Yang, F. [4] manage to point out that the application of answering system based on question by user using a knowledge database. The system is applied by Massachusetts Institute of Technology, where the knowledge database is adapting the FAQ concept is providing information to the student and staff of the institute. Another application of FAQ concept in application system is the FAQ Finder applied within log files for the local system of University of Chicago. The effectiveness of the system has been tested by Burke, R., Hammond, K., and Kulyukin, V. [5] where the result returned more than 50% of the question is automatically answer correctly when user asked. The rest is still untested however has proven a significant expected success rate regarding the effectiveness of the FAQ concept.

III. METHODOLOGY

A. SDLC Method of Throw Away Prototyping

The Throw Away Prototyping SDLC is the development of system which apply the concept of standard SDLC, however, this concept give more attention on assisting the developer to foresee the prototype of the finish product. The prototype, the web application interface is prepared representing the basic design without other functionality. This concept enables developer to have the FAQMaS web interface and other parts even without functionality, to do evaluation and time for changes.

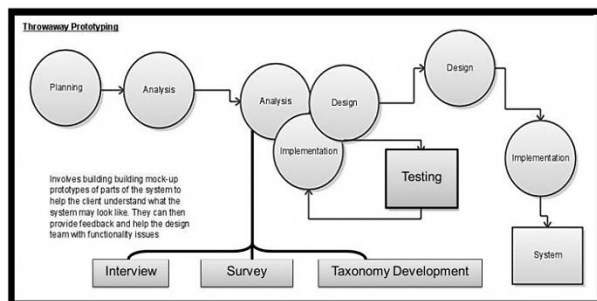


Figure 1: Throw Away Prototyping

B. Interview with CSIMAL Representative.

Interview done with CSIMAL executive, Mr. Azrul Hasyimi Zabidi with the objective of:

- To inform and establish cooperation between the developer and the expert of the process, which is the CSIMAL.
- To gather background information of the expert, the department, on the process flow for the program.
- To acquire the assistant of the CSIMAL's staff on any information they have regarding any issue highlight by student regarding the internship program.

C. Online Survey for User Perspective

The second method used for the collection of data is the online survey which directed to user, both intern and lecturer. For intern, especially who currently is doing their internship, and also, student which done their internship. In the same time, another set of survey for stuff data has been given to CSIMAL Staff as another part of input. The result obtain from the survey will be analysis by applying the concept of taxonomy, where the model or category will be presented at the web application as to ensure the question is efficiently well organize, making the applications of FAQMaS become more user friendly.

D. The Taxonomy Development Process

This process highlight the step by step application in developing the taxonomy structure and then, applies it to the specific domain or field. As in research by Whittaker, M. and Breininger, K. [6], taxonomy is method in consistently organizing and categorizing certain information so that the searching process can be simplified. In a way, the user doesn't need to used complicated or complete vocab but still manage to retrieve things that they try to find. This concept is later on approved by Harris, G. [7] as the best taxonomy development method, which is:

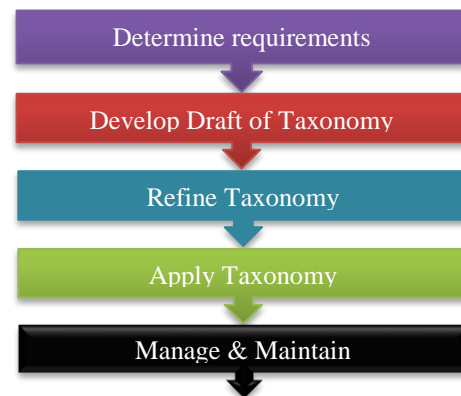


Figure 2: Steps in Taxonomy Development

APPENDIX

E. TOOLS USED

In the development of the FAQMaS, it involves the interaction between user and the content management system through the graphic user interface. As for that, the development of the application will have two main parts, the user interface and the content management system. The tools used in developing both part are:

- Wordpress – The main development platform where the user interface is structure and build. Comes with all the necessary tools and plug in. Customization can be done to the plug in by doing some scripting to alter the function.
- Q n A Plug In - Enable the collection of questions and answers made within its directory that acts as the small database for FAQ. Does not limit to any number of FAQ, this functionality enable the developer to apply the taxonomy and define specific category to make it easier for user.
- WampServer – The mini server which assist developer to develop their web application within their local machine. Acting like a webserver, this application combining the package of Apache which help in providing the web page to the requester, package of MySQL that responsible for database functionality for web component, and lastly the PHP that enable faster code processing as it have its own server before go to the browser.

IV. RESULT AND ANALYSIS

A. Process Flow Diagram

The method used to represent the process movement of a project, from the input all the way to the output. The method also used to express the idea or design plan of a system. Instead explaining using words, the used of diagram assist in making things more attractive and easier. Referring to the explanation by Edraw [8], process diagram can be called with different term such as process flow chart, process flow document, and other. However, all these conveying the same purposed which is the movement of the project process.

Below is the process flow for FAQMaS from the perspective of user and the administrator:

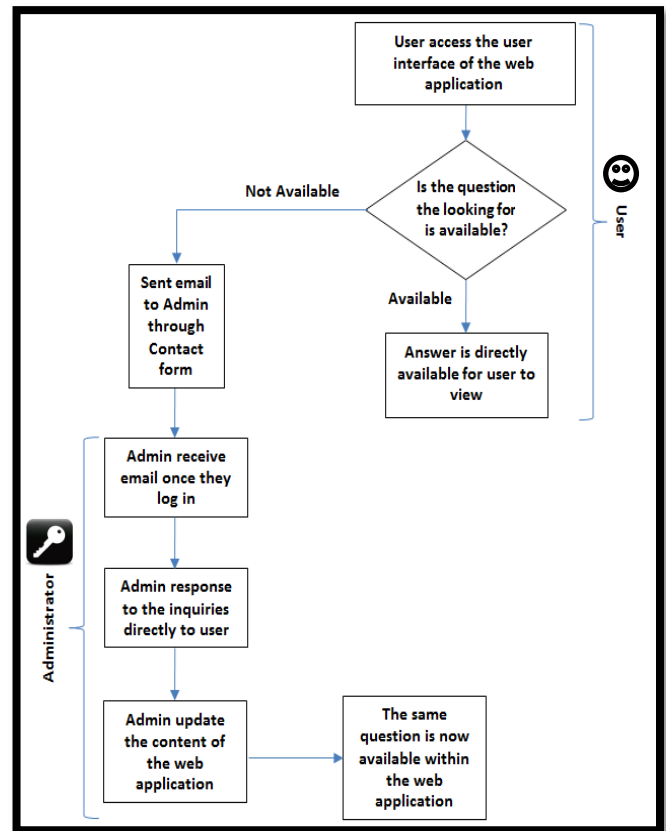


Figure 3: FAQMaS Process Flow

The Project Architecture - The project architecture is to highlight the module involved according to the role play by the personnel. In the FAQMaS, the role will be either User or Admin which then tight to a specific module of task. This module will highlight what are the action that can be done by the role and how it affecting the architecture. Below is the architecture for FAQMaS, where it shows the User and Admin perspective.

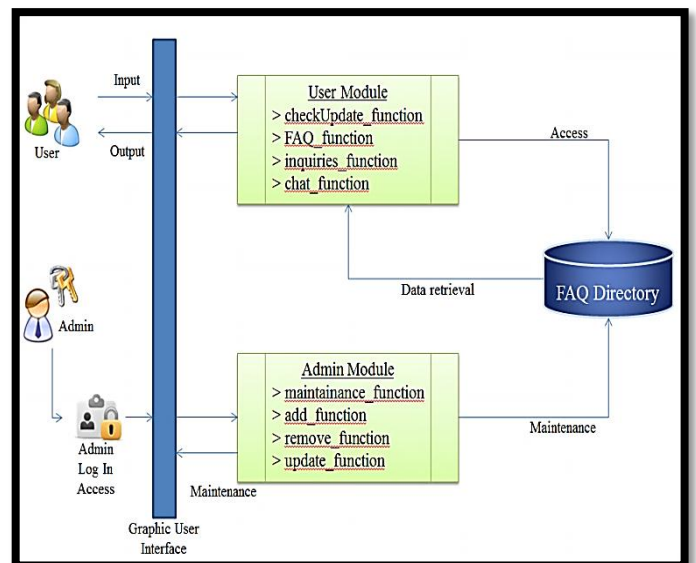


Figure 4: FAQMaS Project Architecture

APPENDIX

B. Result Discussion of Interview

The data collected during the interview showing that as far as CSIMAL received any issue or question from intern as well as lecturer, the approach done is through direct answer. The method applied focus on direct one to one approach such as through phone call, personal email, as well as face to face conversation. The analysis done show that, CSIMAL entirely depends on these three mediums to deliver information arise by either user or lecturer. In additional, in case of CSIMAL need to do announcement on any specific matter, the medium used to deliver the information is the E-learning. From there onwards, the dissemination of information in depends on intern to access their E-learning. Depending on the availability as well as responsibilities during that specific time, CSIMAL staff needs to jump between their own personal task and answering the issue. In a way, their responsibilities towards both task demand high attention and when redundancy occurs will affect CSIMAL staff productivity generally.

Based on the interview and material provide by Mr.Azrul, the developer come to conclusion that the development of the application should focus directly on the internship flow. This is because the fact that the flow has all the component and remarks which has become the important key to towards the overall process. On top of that the same flow is given to the intern to keep themselves align with the entire planning of the internship period.

As included in the structure of the web application, the user will first select the stage or phase of the internship, exactly the same as being stated within the flow, which are:

- Pre-Internship
- During Internship
- Post Internship

The selection of the internship level will help both the user and the admin to easily identify what is the stage related to the issue they want to search about. From there, user will be present with the list of processes under that specific phase. Here, user will then selecting which related process they want to know, and after that, arrived at the list of questions. Upon there, user needs to click the question to be able to see the answer for their question.

C. Result Discussion of Survey

Since the survey is made based on the three phases of the internship, the analysis showed:

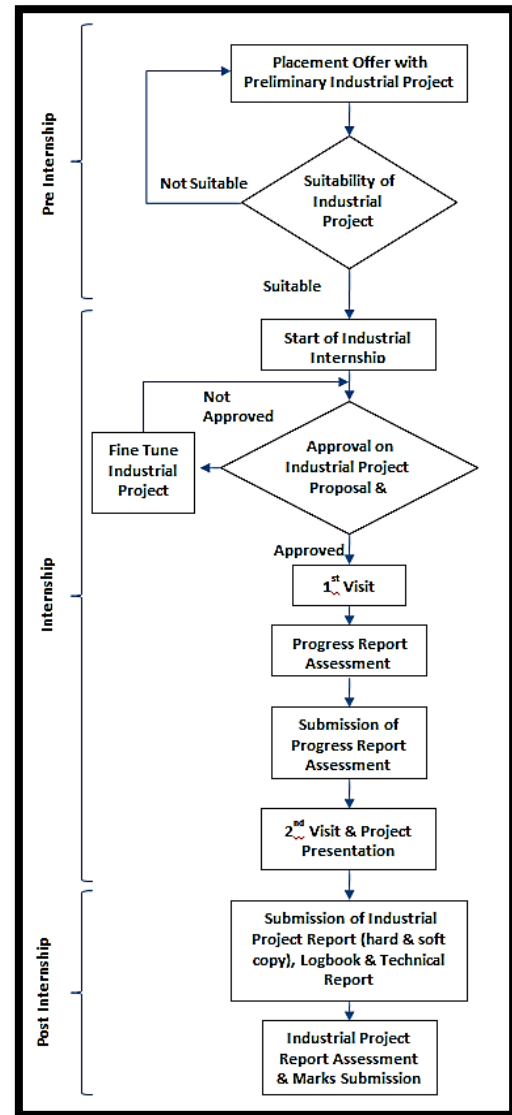


Figure 5: Internship Flow

For pre-internship phase:

- Most of the issue is related to the details on preparing for internship. Issue such as contact number of potential host company and details expected to be include in the resume. Another point highlight from there is the student felt that they don't get enough information on company that can be approach for internship placement.
- Most of the student showed that CSIMAL is their main choices of reference in obtaining information regarding internship. Then follow by referring to senior. This probably due to the experience of the staff as the process is the same every semester.
- In term of rating for CSIMAL response rate, the result showed that quit high dissatisfaction as the response can be very late. This unfortunately due to over work on the staff and affecting the department image.

APPENDIX

For during-internship phase:

- The most issue linger around the intern during this phase is the details of requirement from CSIMAL. All the details are referring to the forms that intern need to complete along the internship period. Another common matter is regarding visit by UTP SV. All these can be conclude as detailed of process which required intern to alert and follow all the guideline given. Only by that everything can be smooth following what the standard CSIMAL prepared.
- As agreed by many, these issues do experienced by many interns from different location of placement. Here indicated that common issue that led to every intern raised same thing towards CSIMAL.

Lastly, the result and discussion on post-internship phase:

- The issues arose by the intern to the CSIMAL are about the final report and the technical report prospect. As this both highlight the end of the internship period, intern become anxious and keep referring to the department for any issue.
- Only small number of intern has problem on other than the report such as process of extending internship period and details on process to do claim regarding internship works.

D. Result of Taxonomy Development Process

As mentioned in the Methodology section, the development of Taxonomy is basically focused on the content management system part.

- **Determine Requirement** – The requirement is being detailed out according to the user involve. As a result, every phase will have different requirement as the users also different. eg: For Pre-internship, the interaction only involve student and CSIMAL staff. There is no UTP lecturer involve as there student still didn't go to internship yet.
- **Develop Draft of Taxonomy** – Based on the three internship phase, the developer has further developed another level of taxonomy which segregates all the issue within the three main phases. By that, this will assist the user to easily browse the application to identify where their issue located.

Internship Phase	Topic of domain
Pre Internship	<ul style="list-style-type: none"> • Requirement and documentation • Resume • Placement Offer
During Internship	<ul style="list-style-type: none"> • Project • Logbook and report • Visits • Working procedure • Others
Post Internship	<ul style="list-style-type: none"> • Report format • Report Submission

Figure 6: 2nd level of Taxonomy

- **Refine Taxonomy** – The process continue within the second level of taxonomy from the previous stage. The taxonomy list is then further refine to filter any redundant or similar issue. After that the answer for the questions is prepared based on CSIMAL standard.
- **Apply Taxonomy** – As the content is complete, the time to deploy the content management system into the interface of the web application. By deploying the content, the developer needs to do testing to other functionality which supports the content management system. By the completion of the testing and other functionality is working properly, the web application is consider complete.
- **Manage and Maintain Taxonomy** – Post deploy session, the web application main functionality is working. In term of the content, the responsible now falls on the admin of the web application to monitor the content management system. The admin will responsible to update, delete, and add new FAQ into the system as to follow the objective of the application in the future.

E. User Acceptance Testing

Arriving at the near end of the project, the last thing in the development list before the final launch is the testing. The testing on the prototype is made by incorporating the users, both intern and also the admin. With the purposed to collect feedback and comment, the changes will be made immediately before the final launch.

The testing is made by considering three main aspect of the web application. Before that, a demonstration is planned and then user is allowed to do hands on activity before submitting their feedback and comments. The result of the user's feedback and comment highlight that:

- **The Design** – The result of the testing showed that user satisfies with the image and color used as it represents the corporate image. However, a better perspective in term of variety colors also can be used as long as it maintains the corporate identity. For button and tab design, everyone vote for high satisfaction. Proper arrangement and visibility are the pitch point why user votes for high satisfaction.
- **The Navigation** – The user is asked to evaluate their browsing experience. The rating is made on the click rate they need to do, whether they can easily trace their step while browsing the page, and scrolling effort. The feedbacks showed that user satisfy with the current state, as everything is

APPENDIX

properly developed. As part of the check list while developing the application, the developer try to accommodate based on user experience by putting easiness as their main objective. Visible history track and accessible link serve the purposed.

- The Functionality – For the web application, the highlight of it is the FAQ functionality. However, to make thing more interactive and attractive, developer include several other functionality. User testing on the functionality such as the high level security system to avoid spam from the Contact form to admin email, social network button to share their experience, and the Quick chat apps that enable user to interact with each other. The conclusion from the feedback highlights positive support on the security system as well as the social button. For the Quick chat, some give positive response while some other thinks that it is not significant to have that. They also added that the quick chat can jeopardize the corporate image as user might use it for unrelated stuff. Developer agrees to maintain it, but it will be under top priority for admin to monitor the content and its usability.

F. CONCLUSION

Internship program by UTP has become one of the core subjects of the student. By that means, every student will undergo for this course and the management of the course is under CSIMAL department responsibilities. Since the process the same and only the participant are changing every year, the same issues do arise in every semester.

By that, there come the FAQMaS which assist in avoiding redundant issue of similar question being raised by every student. Serve the student as web application, the FAQMaS can easily being access through web browser anywhere around the world. In addition, through the web application, it is intended not just solving the redundant issue, but also increase the productivity of the CSIMAL staff as well as the UTP lecturer. Student can obtain information easily from the web application and there will not need to directly contact with the stuff unless the issue is not available in the application.

For future recommendation, the short milestone that needs to achieve currently is in term of promoting the web application in the internship program. The implementation of new thing will require sometime and close monitoring to cater for any problem that might occur. For future prospect, it's recommended that CSIMAL focus on the functionality such as online form service and also live chat function that give more attraction and control over the information. Next, in term of commercialization, the web application can be a

medium in disseminate the internship program to other multinational company as any information can be obtain from the web application, just not limited to FAQ.

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